Lotus Elan M100 Service Bulletins
Series 1 and Series 2 1990 - 1996

SERVICE BULLETIN

Date 06.04.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/11

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Replacement of headlamp flap 'J' links.

REASON: Incorrect material specification of some links may result in distortion of link and faulty operation of headlamp mechanism.

ACTION: At the next opportunity (i.e. next time the vehicle is on the dealer premises), replace the headlamp flap 'J' links on all 1990 model year Elan and Elan S.E. models in the following VIN range:

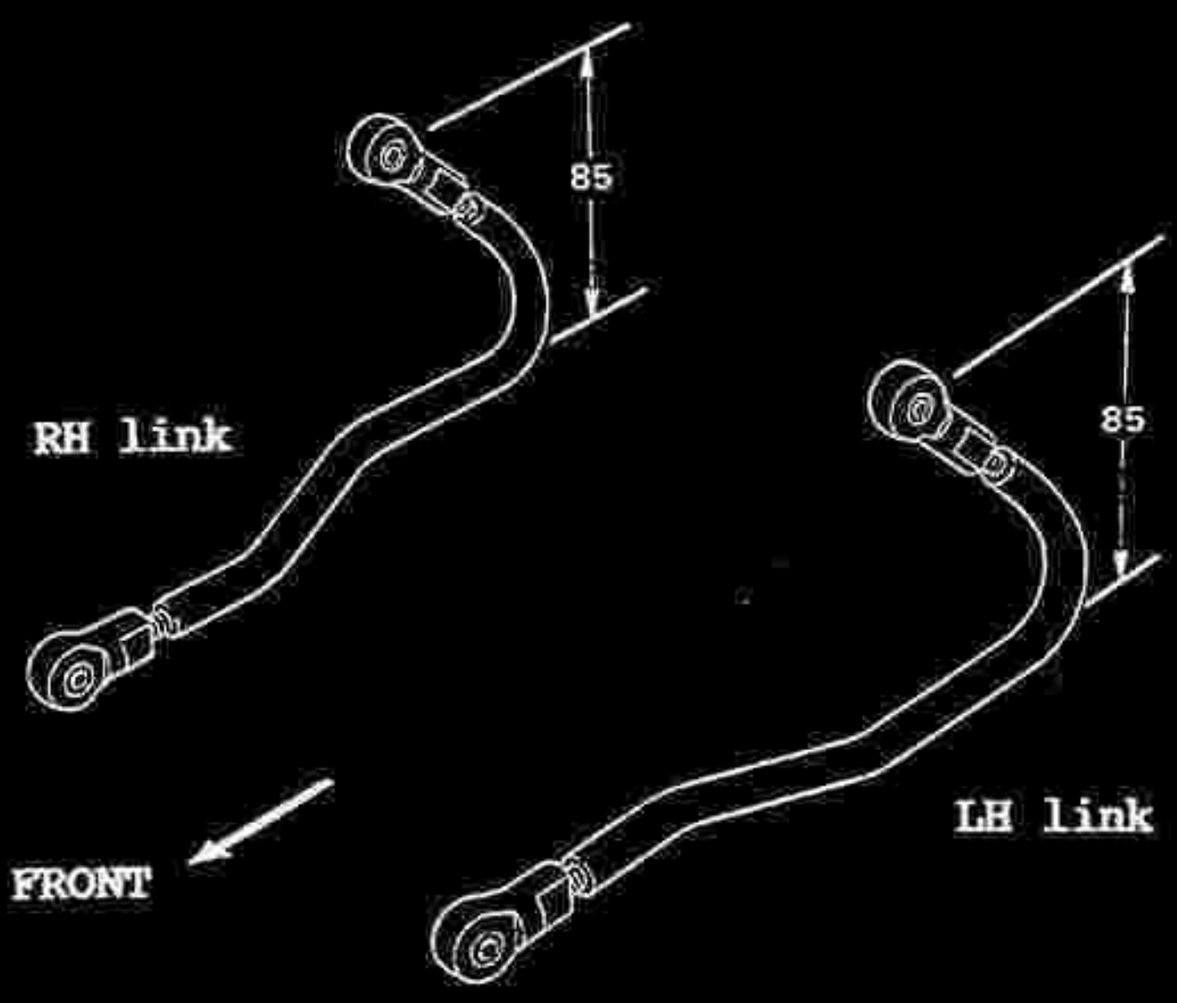
VIN serial number 6105 to 6192 inclusive.
Check VIN of all dealer stock and demonstrators.

Parts Required

	Part No.	Qty.
'J' Link, RH, headlamp flap operating	D100B0760	1
'J' Link, LH, headlamp flap operating	D100B0761	1

(Note that correct links are identified by a white band)

Before fitting the 'J' links, ensure that each link is correctly identified and adjusted as shown in the diagram.



If operation of the existing headlamp mechanism is satisfactory, it is necessary to adjust only the cover flap upstops and 'J' links as detailed from step 7 of the following set up procedure.
First remove the cover flap outer panels and screw the flap upstops fully down.
If the existing mechanism does does not perform satisfactorily, follow the complete set up procedure:

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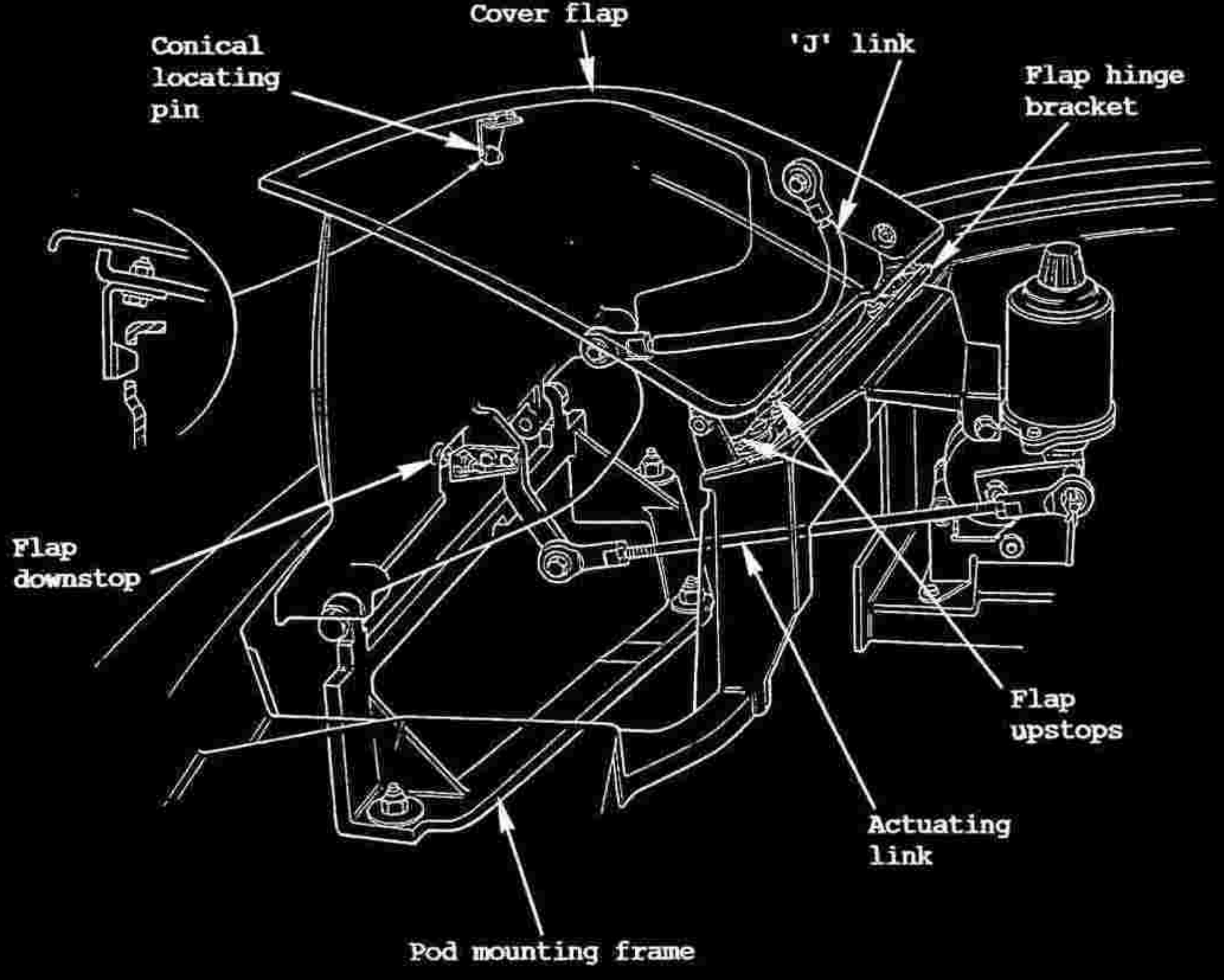
Headlamp Mechanism Set Up Procedure

The principal headlamp mechanism components are:

- Headlamp Pod; Aluminium alloy casting carrying a pair of headlamps. Pivoted to the pod mounting frame.
- Pod Mounting Frame; Aluminium alloy casting, bolted to the base of the topshell pod well.
- Headlamp Cover Flaps; Cast aluminium alloy inner, and composite outer skin panel. Pivoted to a hinge bracket on the topshell.
- Flap Hinge Bracket; Steel bracket bolted to topshell.
- 'J' Link; Steel link rod with ball joint at each end. Connects the cover flap to the headlamp pod.
- Headlamp Motor and Actuating Link. Motor is mounted via bracket to the chassis longeron and connected to the headlamp pod by a steel link rod fitted with a ball joint at each end.

Various adjustments to the headlamp mechanism are required to ensure a) consistent shut gaps, b) satisfactory mechanical operation under all driving conditions.



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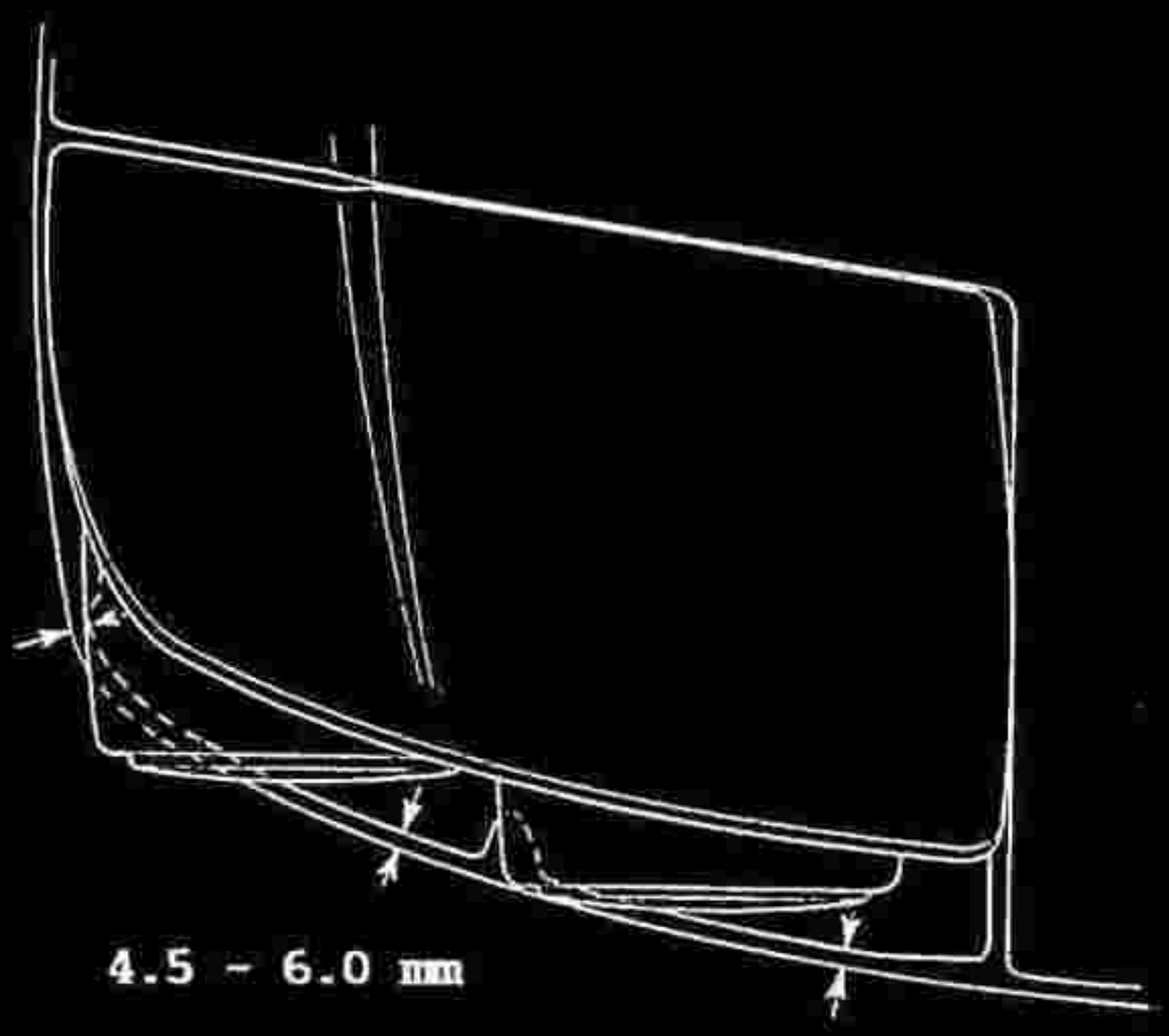
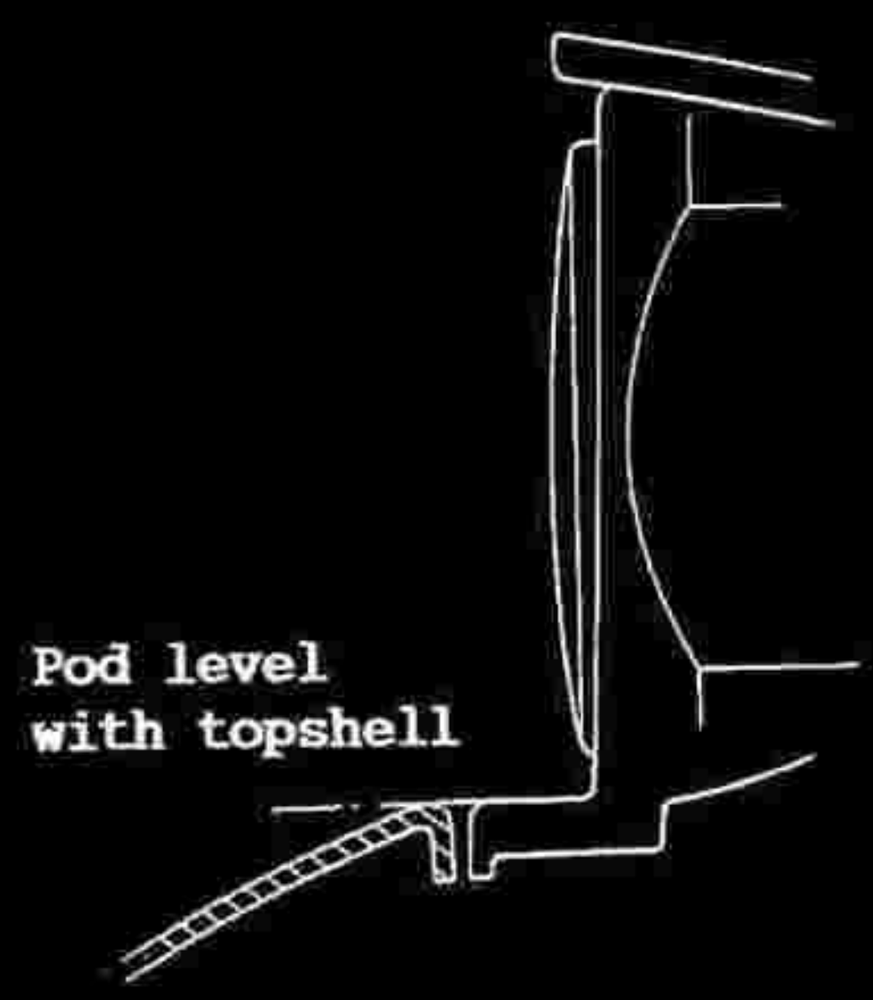
1. Before adjusting the headlamp mechanism, disconnect or remove the following:
   - pod actuating link;
   - cover flap outer panel;
   - cover flap operating 'J' link;
   - conical locating pin at front edge of flap inner;
   - fully screw down the pod upstops in the flap hinge bracket.

2. Pod Pivot Frame: The pod pivot frame is secured to the base of the headlamp pod well by three studs. Hold the pod in the erect position with the headlamp face vertical, and if necessary, slacken the three fixings and re-position the frame to align the front edge of the pod with the topshell. The shut gap between the pod and topshell should be 4.5 - 6.0 mm.
   Slotted spacer washers may be inserted or removed at each frame fixing point to adjust the height of the front edge of the pod, which should be level with the top edge of the topshell.





3. Pod Actuating Link: Wind the headlamp motor to the fully up position with the rotary link against the (rear) stop bracket. Adjust and connect the pod actuating link so that the front face of the pod leans forward 1° to 2°.

4. Flap Hinge Bracket: Wind down the pod, and shut the bonnet. Place the cover flap outer panel loosely in position and examine the shutlines around the cover flap in relation to the topsheil and bonnet panel. If necessary, slacken the two hinge bracket fixings, and move the bracket or add/delete shim washers as required. The flap downstop is adjusted later.

5. Conical Locating Pin: Wind the pod fully up. Fit the locating pin to the flap inner, and centralise in the pod hole. If necessary, move the flap hinge bracket sideways so this can be achieved. Re-check cover flap shutlines. Tighten the locating pin fixings with the pin fully engaged in the pod hole, with the pin bracket abutting against the pod.

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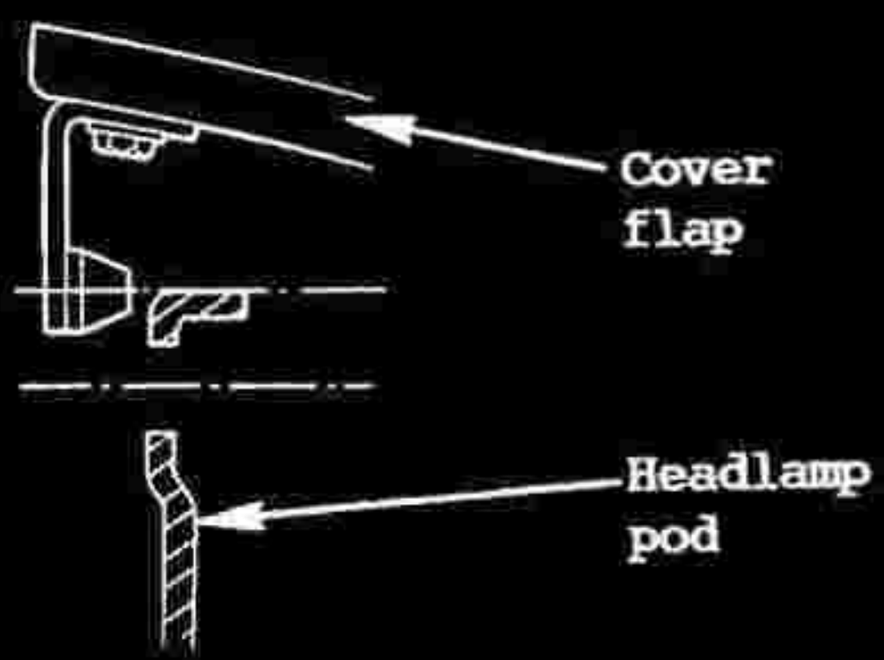
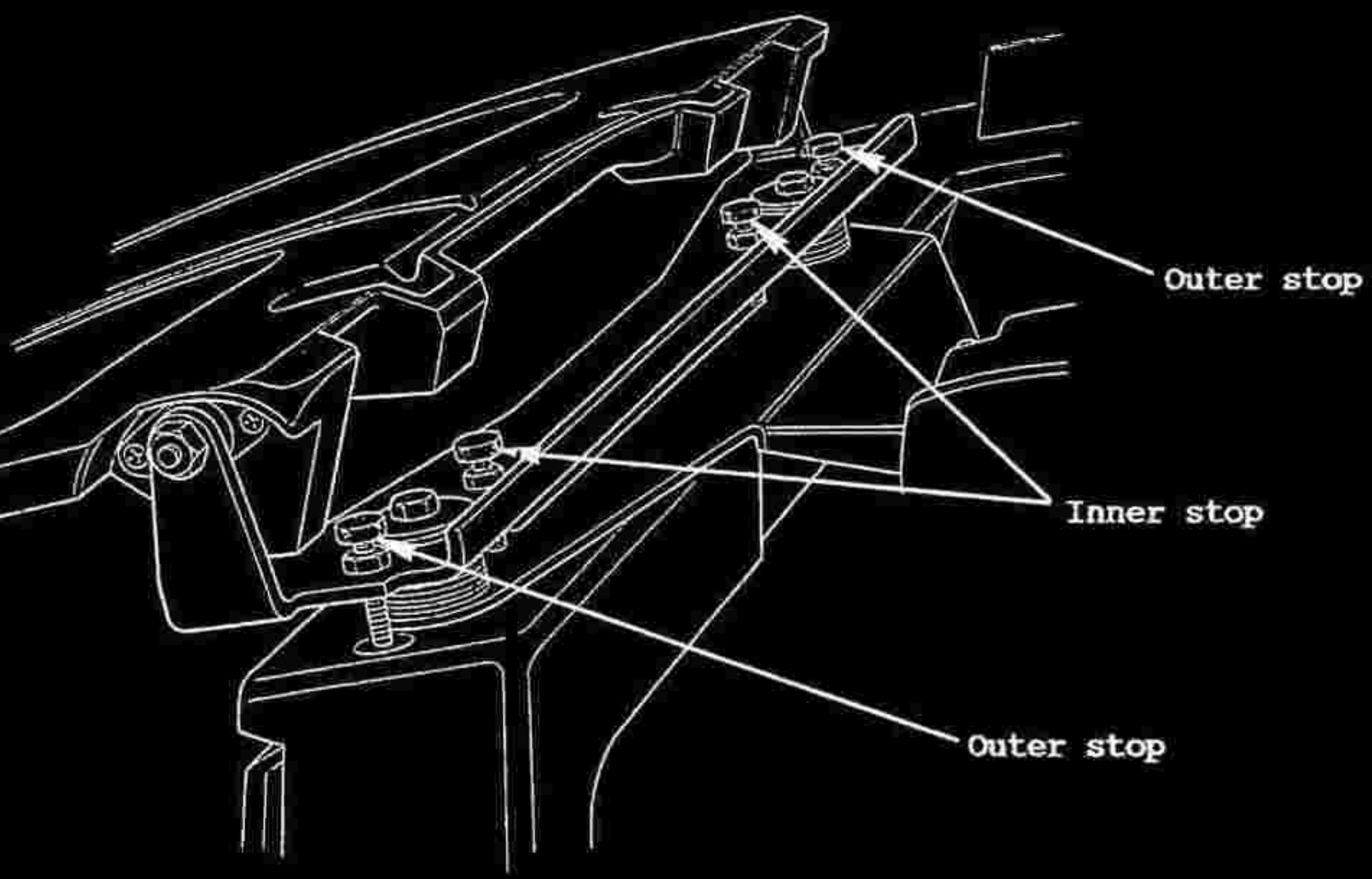
6. To preload the pod against the flap, lower the pod partially and reduce the pod actuating link length by a ½ turn.

7. 'J' Link: Wind up the pod until just short of the locating pin. Adjust the length of the 'J' link at the pod end, so that when the link is connected, the centreline of the locating pin is level with the top of the pod. Connect the link, then press the front of the cover flap hard down against the top of the pod and screw up all four upstops (in flap hinge bracket) against the cover flap.



8. Wind down the pod. Apply one full turn counterclockwise to the flap outermost upstops, and a half turn counterclockwise to the innermost upstops. Tighten locknuts.



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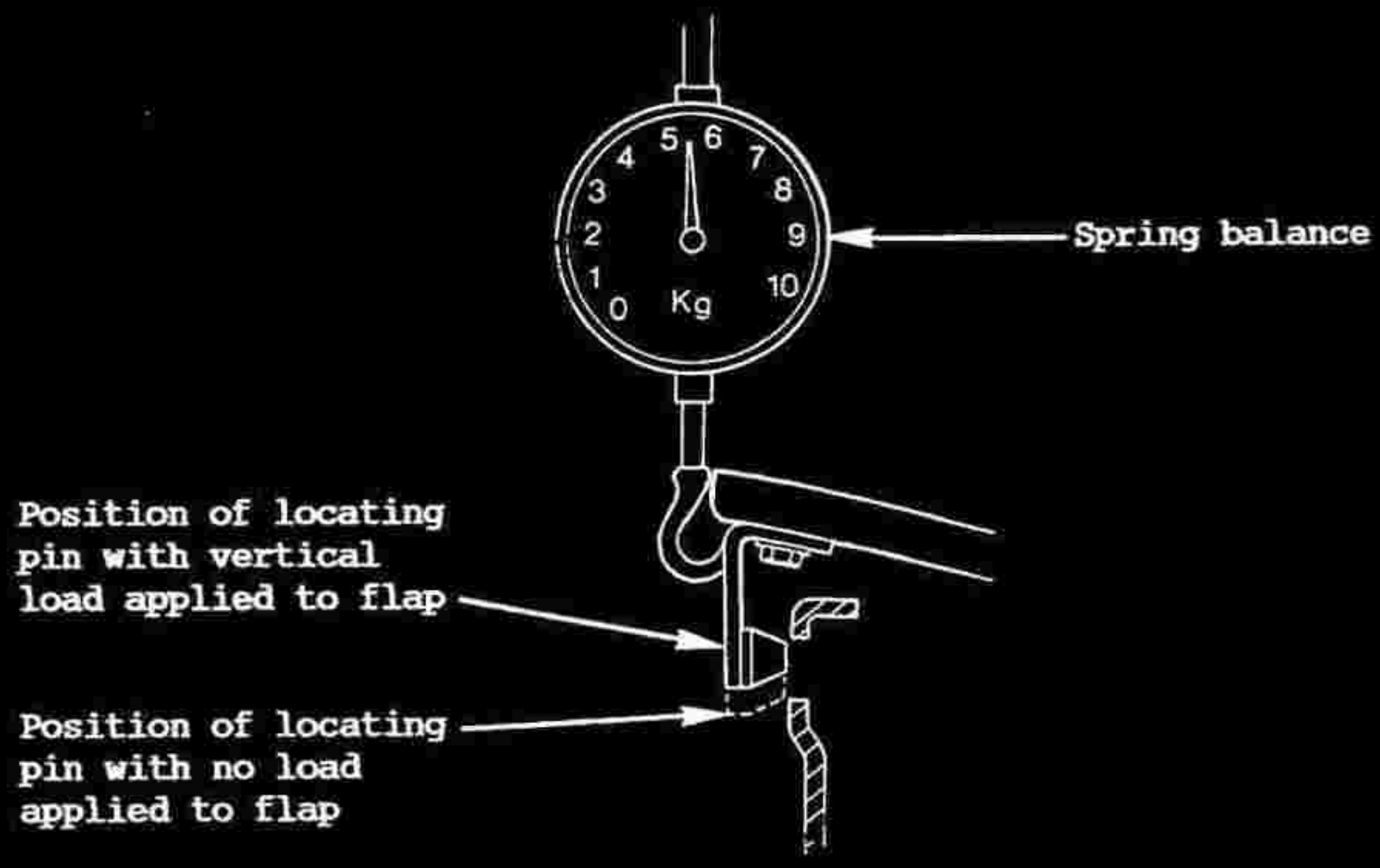
9. Wind up the pod and check that the conical locating pin enters the pod hole. In the vehicle static condition, the pin should enter the hole below its centreline, and engage fully when the pod is fully raised. If the pin is too low to enter the hole, turn all four upstops ¼ turn clockwise, and recheck. Repeat if necessary until engagement is achieved.

10. In order to ensure correct operation at high vehicle speed, it is necessary to test for locating pin engagement with an upward load (wind pressure) applied to the cover flap:

Continued.....

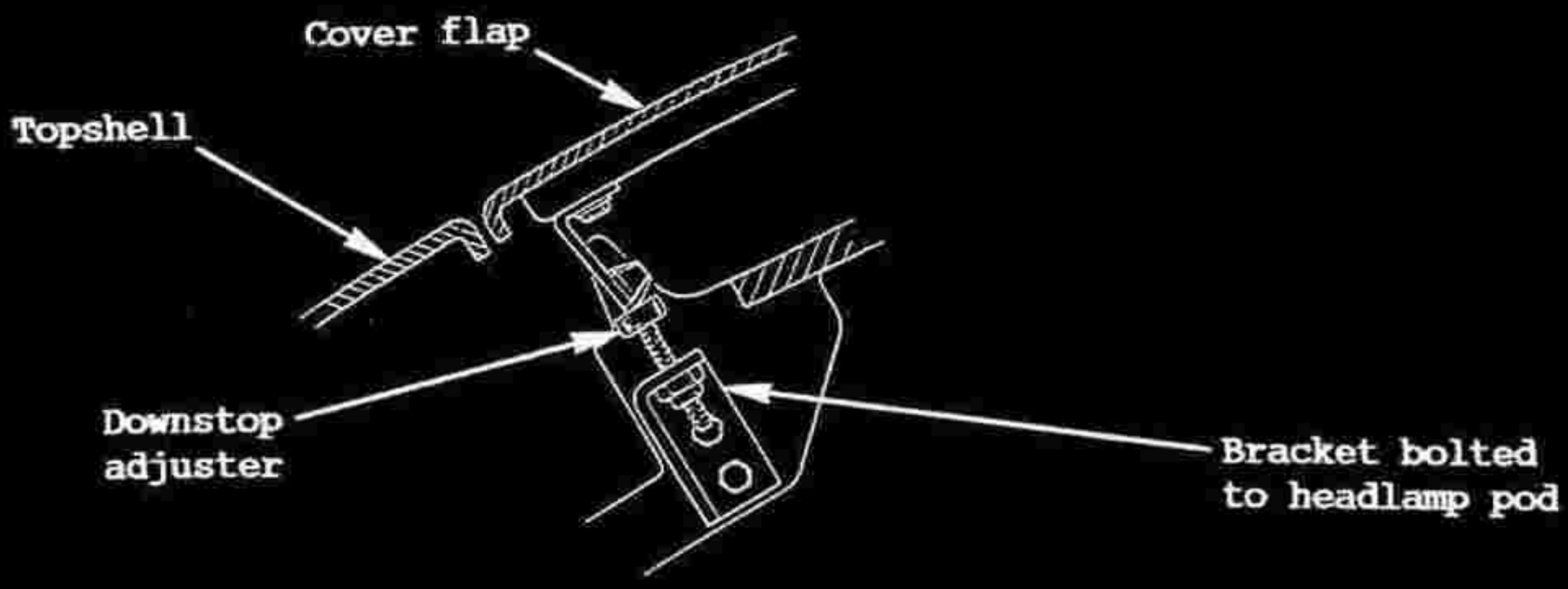
Lower the pod sufficiently for the locating pin to disengage and attach a spring balance to the flap adjacent to the locating pin. Apply a vertical upward load of 5 to 6 kgf to the flap and wind the pod fully up. The pin should enter the top of the pod hole, and engage fully when the pod is fully raised.


Spring balance
Position of locating pin with vertical load applied to flap
Position of locating pin with no load applied to flap

If the pin is too high, adjust the four flap upstops ¼ turn counterclockwise and recheck. Recheck operation with no flap loading.

11. Fit the outer flap onto the inner, and retain with the four fixings. Adjust the position to obtain 4.5 to 6.0 mm shutlines all around the closed pod before tightening.

12. Check/adjust the flap front edge downstop to achieve a compatible panel height with the topshell.



13. Check headlamp alignment.

CHARGES: 3.0 hr/car. Warranty claims marked S/B 1990/11 Class 2 should be submitted.

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SERVICE BULLETIN

Date 06.04.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/12

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Replacement of steering rack spring plunger.

REASON: Material specification improvement for extended durability.

ACTION: At the next opportunity, (i.e. next time the vehicle is on the dealer premises) replace the steering rack plunger on all 1990 model year Elan and Elan S.E. models, manual and PAS, in the following VIN range:

VIN serial number 6115, 6126 to 6130, 6132, 6133, 6136 to 6138, 6141, 6142, 6144 to 6150, 6152 to 6154, 6161.
Check VIN of all dealer stock and demonstrators.

Parts Required
On request to the Warranty Dept., quoting the VIN, a steering rack plunger will be supplied free issue.

To replace the plunger, proceed as follows:

1. Disconnect the LH radiator fan harness and release the harness from the open 'P' clip on the underframe.

2. Remove the engine bay underframe:
   - Release the three M6 setscrews securing the front end of the underframe to the radiator support frame.
   - Release the engine front damper from the underframe. Note the spacer washers.
   - At each rear end of the underframe, release the 2 bolts securing the underframe to the chassis front crossmember, 2 nuts and bolts securing the underframe to the support strut, and the single nut (and bolt) securing the underframe/raft/strut.
   - Withdraw the underframe.

3. At the rear of the steering rack pinion housing, slacken the plunger adjuster screw locknut, and back off the adjuster screw to relieve some of the plunger spring pressure. Release the two screws securing the retaining plate (NOTE: Plate is spring loaded), and remove the plate, spring cup and spring.

4. In order to minimise oil loss, have the new plunger to hand before withdrawing the old plunger and inserting the new. If necessary, any oil loss may be corrected after re-assembly by injecting a similar quantity of EP 80 into the pinion end rack gaiter. (Total oil quantity in pinion/rack teeth area = 0.14 litre).

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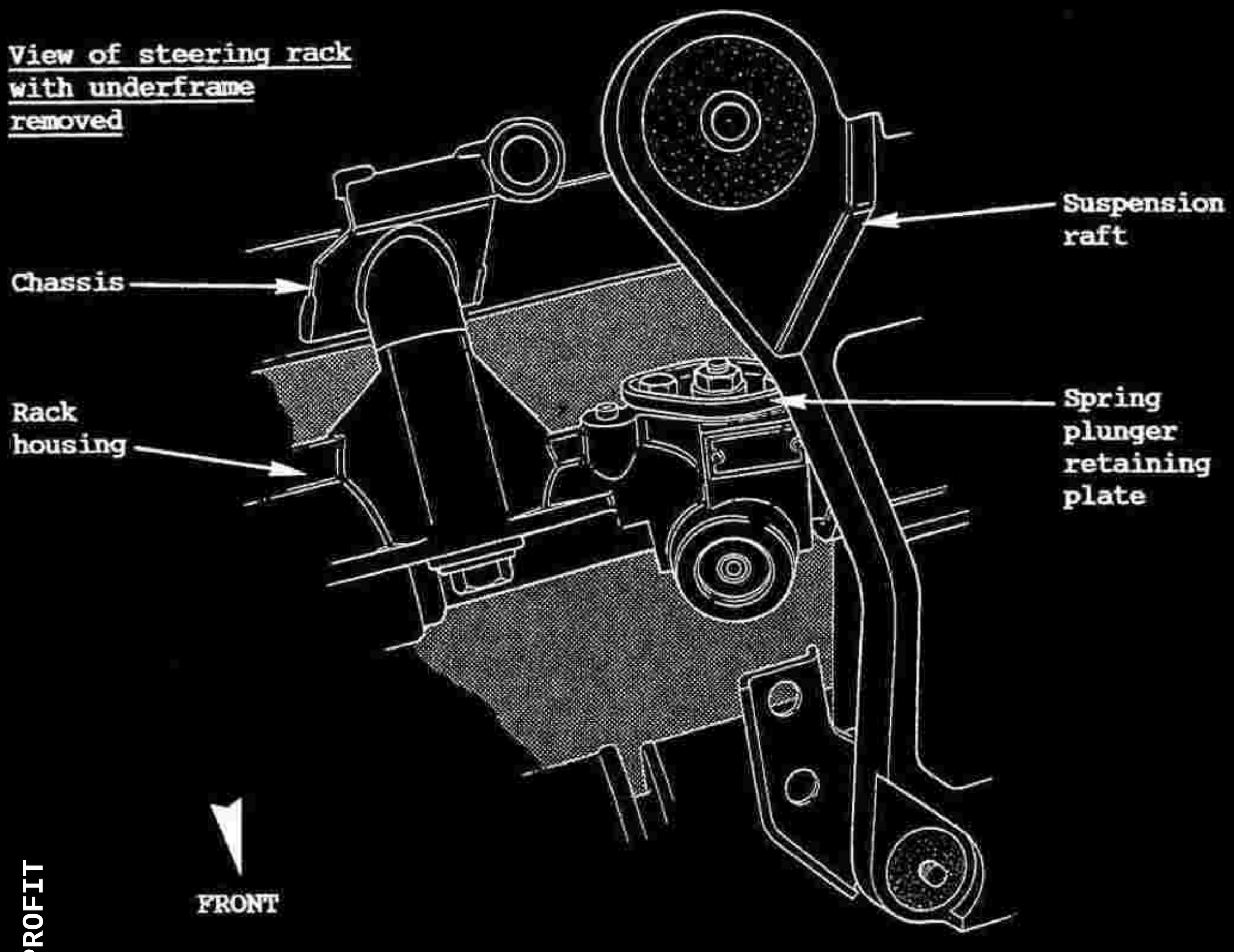

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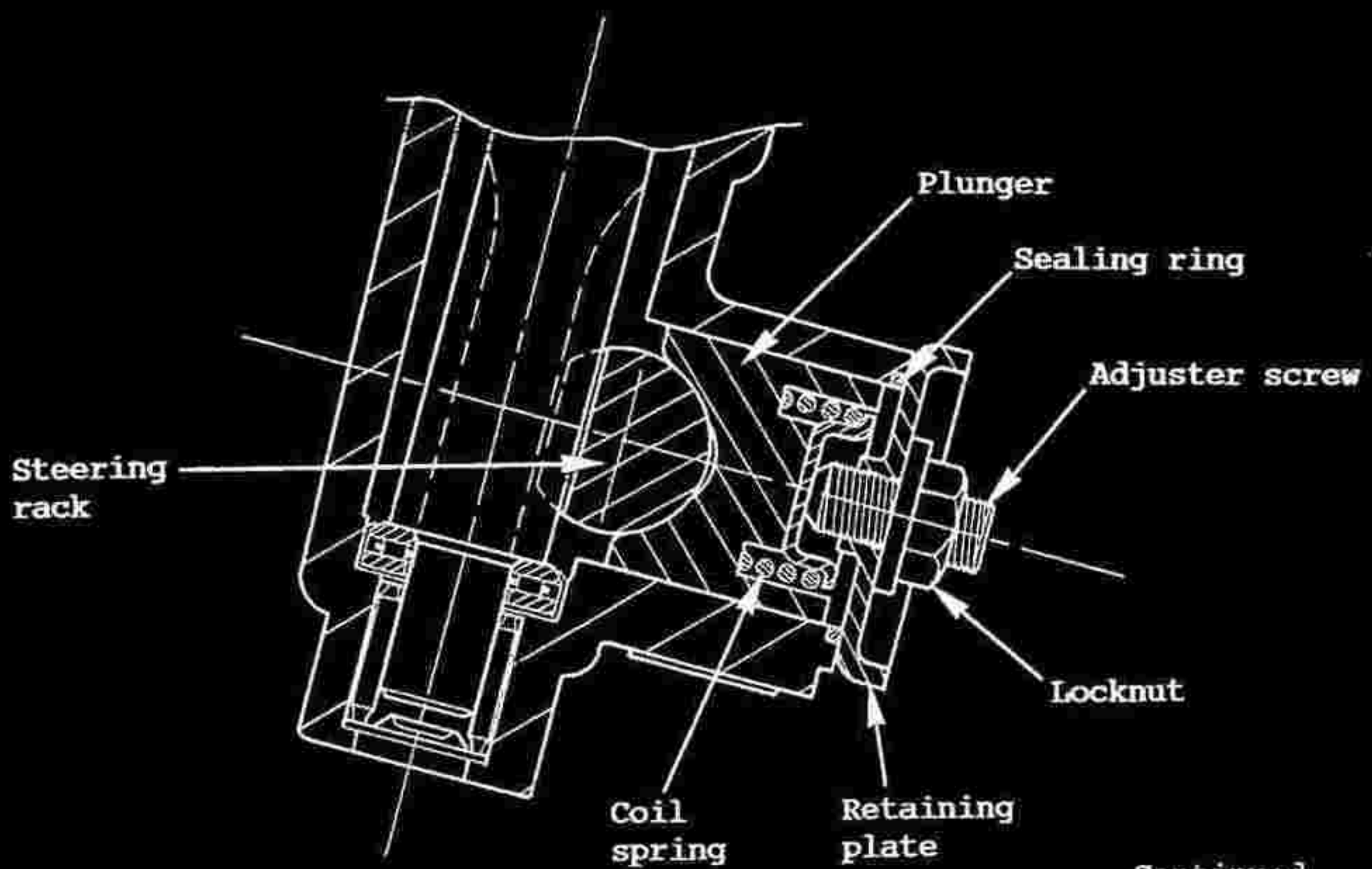
5. Refit the spring and spring cup, and check that the sealing ring is correctly positioned on the rack housing before fitting the retaining plate with its two screws and shakeproof washers. Torque tighten the two fixings to 23 Nm (17 lbf.ft).



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6. Adjust the spring plunger:
   - Tighten the adjusting screw until resistance is felt.
   - Back off the screw the minimum amount necessary so that when the rack is moved through its full travel (by turning a road wheel) no increase in resistance (tight spot) can be felt.
   - Hold the adjusting screw and torque tighten the locknut to 23 Nm (17 lbf.ft).
   - Recheck for tight spots.

7. Apply green paint to the plunger retaining plate and screws.

8. Refit the underframe noting the following points:
   - Apply thread locking compound to the 4 bolts securing the underframe to the chassis front crossmember (also take care not to crossthread these bolts), and to the three M6 setscrews at the front end of the underframe.
   - Fit underframe into position, and support by loosely fitting the two nuts and washers on the underframe/raft/strut bolts.
   - Fit 3 setscrews, with thread locking compound applied, at front end of underframe into radiator support frame, and nip up.
   - Ensure both rear ends of the underframe are pressed against the chassis before inserting the 4 rearmost bolts, with thread locking compound applied, taking care not to crossthread.
   - Fit the remaining 4 underframe to strut bolts with nyloc nuts uppermost.
   - Progressively tighten all bolts:
     M14 bolts to 75 Nm (55 lbf.ft)
     M6 screws to 10 Nm (7.5 lbf.ft)
   - Fit a thick washer each side of the engine damper lower eye and tighten fixing bolt to 24 Nm (18 lbf.ft).
   - Re-connect the fan harness, and secure harness in 'P' clip.

CHARGES: 1.2 hr/car. Warranty claims marked S/B 1990/12 Class 2 should be submitted.

SERVICE BULLETIN

Date 27.04.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/15

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Relocation of safety inertia switch.

REASON: To reduce the possibility of unwarranted switch activation. The inertia switch is mounted on the rear side of the cabin rear wall in the battery compartment, and can in rare circumstances be tripped by heavy slamming of the roof stowage compartment lid.

ACTION: At the next opportunity (i.e. next time the vehicle is on the dealer premises), carry out the following procedure to relocate the inertia switch on all 1990 model year Elan and Elan S.E. models in VIN range:

VIN serial number 6115, 6126 to 6130, 6132, 6133, 6136 to 6138, 6141, 6142, 6144 to 6150, 6152 to 6154, 6161.
Check VIN of all dealer stock and demonstrators.

Parts Required
On request to the Warranty Dept., quoting the VIN, an inertia switch mounting bracket will be supplied free issue.

1. Remove the battery compartment access cover.

2. Unplug the inertia switch, and release the two fixing screws.

3. Fix the switch to the new mounting bracket with the plunger nearest to the battery. Untape the switch harness lead sufficiently to allow the lead to be routed through the mounting bracket lightening hole before plugging onto the switch.

4. Thoroughly clean the area shown in the diagram where the new mounting bracket is to be bonded. Use the contents of Betaseal kit A075B6158J (used for windscreen fitment on all models) to wipe the bonding areas on both body and bracket with Betawipe.

5. Allow cleaner to dry (1 min) before applying Betaprime to both surfaces using the applicator or a brush.

6. Allow the primer to dry fully (15 min) before spreading a layer of Betaseal adhesive 3 - 4 mm thick over the bonding area on the body. Press the bracket onto the adhesive so that the Betaseal is extruded through the holes in the base of the bracket, and allow to cure for at least four hours before driving the car. In particularly dry conditions, curing time will be shortened by covering with a damp cloth.

CHARGES: 1.0 hr/car. Warranty claims marked S/B 1990/15 Class 2 should be submitted.

Illustrations overleaf.....

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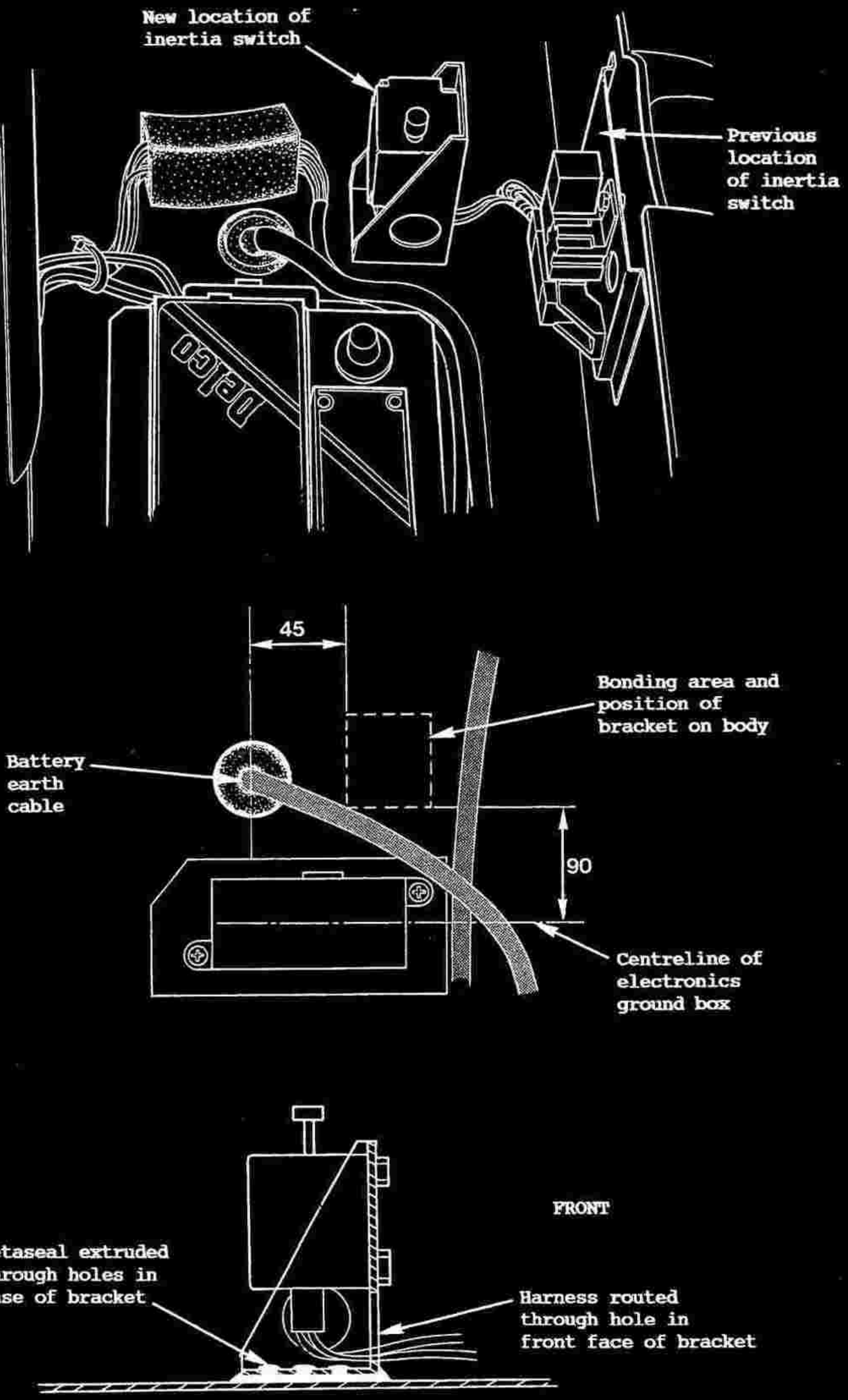
New location of inertia switch
Previous location of inertia switch
45
Bonding area and position of bracket on body
Battery earth cable
90
Centreline of electronics ground box
FRONT
Betaseal extruded through holes in base of bracket
Harness routed through hole in front face of bracket

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SERVICE BULLETIN

Date 27.04.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/16

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Replacement of fuel tank.

REASON: Revised moulding with improved resistance to joint line leakage.

ACTION: At the next opportunity, (i.e. next time the vehicle is on the dealer premises) replace the fuel tank on all 1990 model year Elan and Elan S.E. models in the following VIN range:

VIN serial number 6115, 6126 to 6130, 6132, 6133, 6136 to 6138, 6141, 6142, 6144 to 6150, 6152 to 6154, 6161.
Check VIN of all dealer stock and demonstrators.

Parts Required

On request to the Warranty Dept. quoting the VIN, the following parts will be supplied free issue:

- Fuel Tank Assembly;
  (inc. fuel pump and sender unit)
- 7 off Foam Rubber Pads, tank/body;
- 4 off 'O' Rings, fuel pipe connectors;
- 2 off Rubber Washers.

Fuel pipe connector release tool, T000T0989, will also be supplied, and as part of the Dealer Special Tool Kit, a charge will be made accordingly.
The new tanks are identified by the letter 'M' on the rear face in indelible marker.

To replace the fuel tank, proceed as follows:

WARNING: Pressure is retained in the fuel feed pipe after switching off the ignition. Before commencing work on the fuel system, carry out the fuel pressure relief procedure detailed below, and disconnect the negative battery cable.

1. Fuel pressure relief procedure:
   - Trip the inertia switch (in battery compartment) to disconnect the fuel pump feed, and start the engine.
   - After the engine stops from fuel starvation, crank the engine for at least 3 seconds to further reduce pressure.
   - Disconnect the negative battery cable.

2. Drain the tank by syphoning to reduce the risk of fuel spillage, and to lighten the tank weight.

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3. Remove the roof stowage compartment floor:
- Release the screw securing the top edge of each 'B' post trim panel inboard of the roof pivot mechanism.
- Remove the screw each side of the top edge of the rear wall map pocket. Peel back the top edge of the cabin rear wall carpet and release the 'Scrivet' fixings along the front edge of the capping rail, and the screw at each end securing the 'B' post trim panels.
- Release the screws along the rear edge of the capping rail, and withdraw the capping rail.
- Release the roof rear strap fixing.
- Release the roof front strap anchor bolt.
- Release the 'Scrivet' fixings securing each end of the roof stowage area carpet, and remove the carpet.
- If the trim panel at each end of the stowage compartment is fitted over the ends of the floor panel, remove both end trim panels.
- Remove the spring clips securing the front edge of the roof stowage compartment floor, and the two screws at the rear edge. Remove the floor panel.

3. Release the four screws securing the fuel pump/sender unit access panel, and withdraw the panel, disconnecting the pump/sender electrical plug, and earth cable.

4. Use tool T000T0989 to disconnect the fuel feed and return lines from the fuel pump assembly: Fit the two pips on the legs of the tool into the holes in the end of the 'Speedfit' connector, and press in to release the grip collar whilst pulling back on the connector body. Use an absorbent cloth to soak up any escaping fuel.

Using release tool

T000T0989

5. Release one end of the tank balance pipe in order to free the fuel feed pipe which is routed between the balance pipe and tank.

6. Disconnect the filler and filler breather hoses from the tank, and plug the orifices.

7. To provide room for the tank to drop, the left hand lower wishbone must be lowered: Release the parking brake cable from the caliper lever, and remove the top wishbone to hub carrier bolt. Match mark the position of the toe-in adjustment eccentric before slackening the two lower wishbone to chassis bolts.

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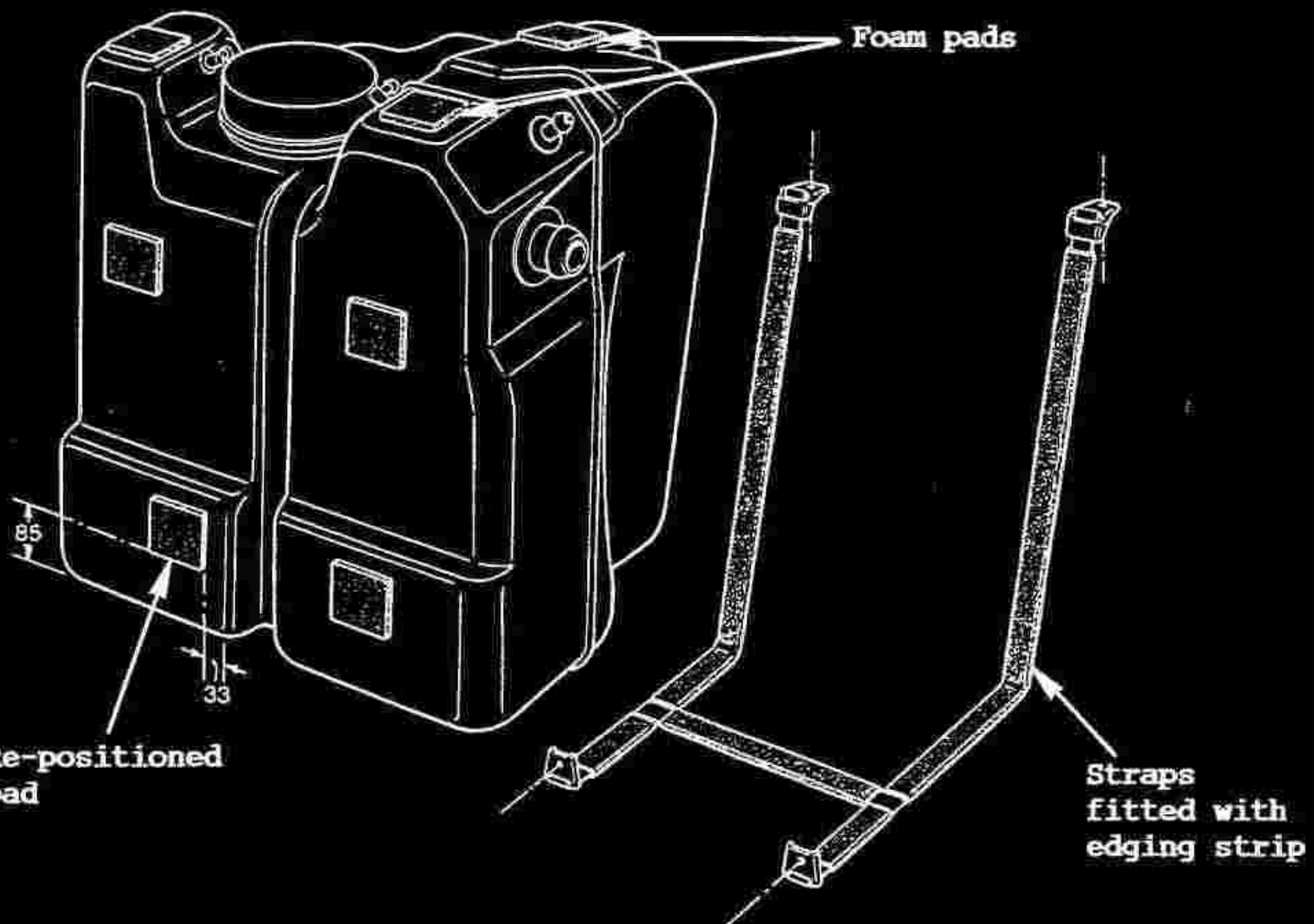
Release the anti-roll bar from the lower wishbone, and the bolt securing the anti-roll bar hanging link to the chassis. Remove the damper to lower wishbone bolt, and lower the wishbone and hub carrier assembly without straining the brake hose.

8. Release the locknut from the underside of the two strap top fixing bolts, and unscrew each bolt. Swing down the two straps and carefully lower the tank, easing the filler stub through the body.

9. Transfer the balance pipe to the new tank, but leave one end disconnected.

10. Use Silastic RTV 732 adhesive (A036E6038) to secure the seven foam rubber pads to the new tank in the positions shown on the diagram. Note that all the positions except the RH lower position on the tank front face are indicated by moulded corner lines on the tank.



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Refit the tank in the reverse order to removal;

1. Remove the two grommets from the body before fitting the tank into position. Ensure that the tank straps are fitted with rubber edging stips. The straps may already be fitted with rubber edging, glued onto each edge, but if not, use the one piece edging strips (outer strap - A100L0134K; inner - A100L0135K; bracing strap - A100L0136K). Fit onto each of the strap sections with the 'open' side outermost. No adhesive is necessary on the one piece edging strips.

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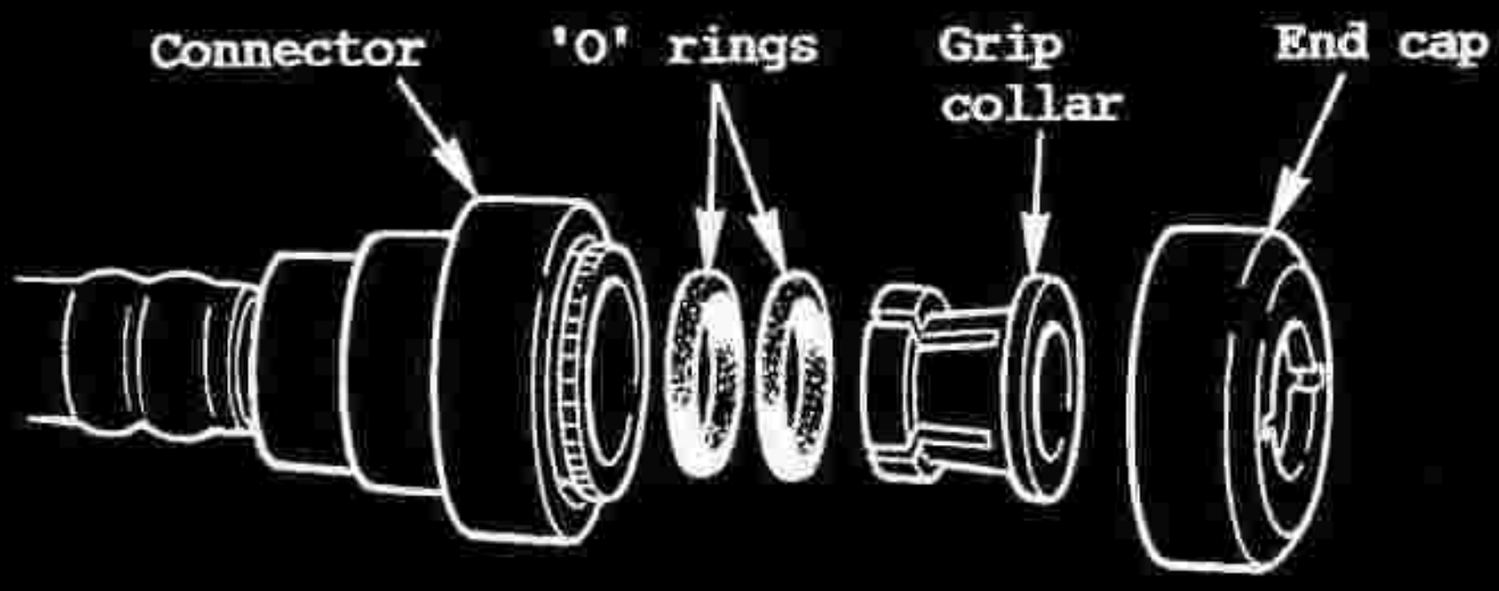
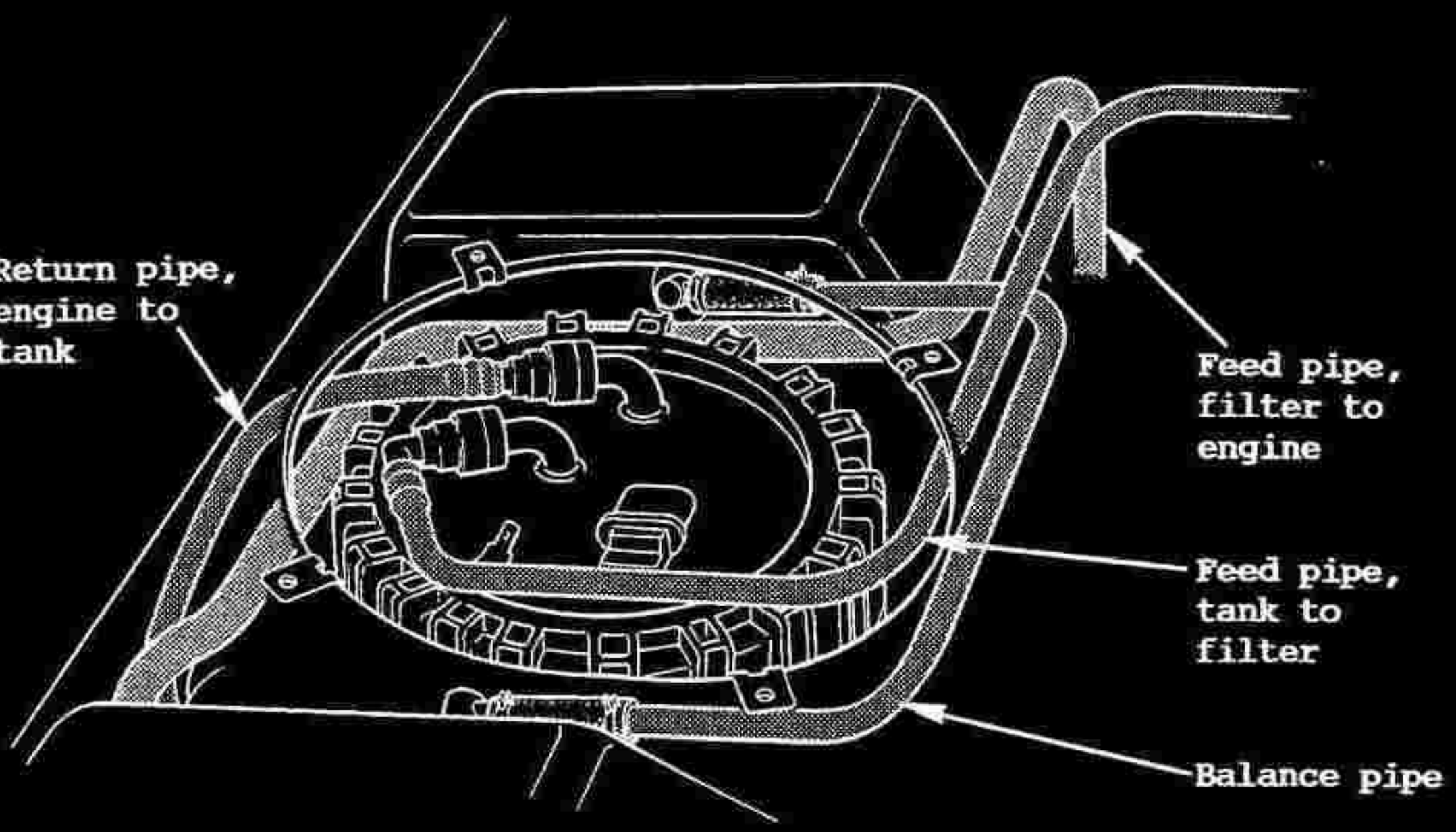
2. Fit the tank strap bolts taking care not to cross thread, and hold the weld nuts with an 18 mm deep socket to prevent the straps twisting whilst the bolts are torque tightened to 12 Nm (9 lbf.ft). Fit and tighten the lock nuts from beneath.

3. Fit the filler neck and filler breather tube grommets. Connect the filler hose, ensuring that the hose passes through the grommet, and secure with the hose clip. Fit and secure the filler breather hose.

4. Renew the 'O' rings in the fuel pipe connectors:
   - Prise off the end cap of the connector;
   - Pull out the gripper collar;
   - Remove the two 'O' rings from each connector;
   - Fit the two new 'O' rings supplied into each connector, and refit the gripper collar and end cap.



5. Check that the fuel feed pipe is correctly routed before connecting the balance pipe, and securing with the spring clip. Push the two fuel pipe connectors onto the tank spigots.



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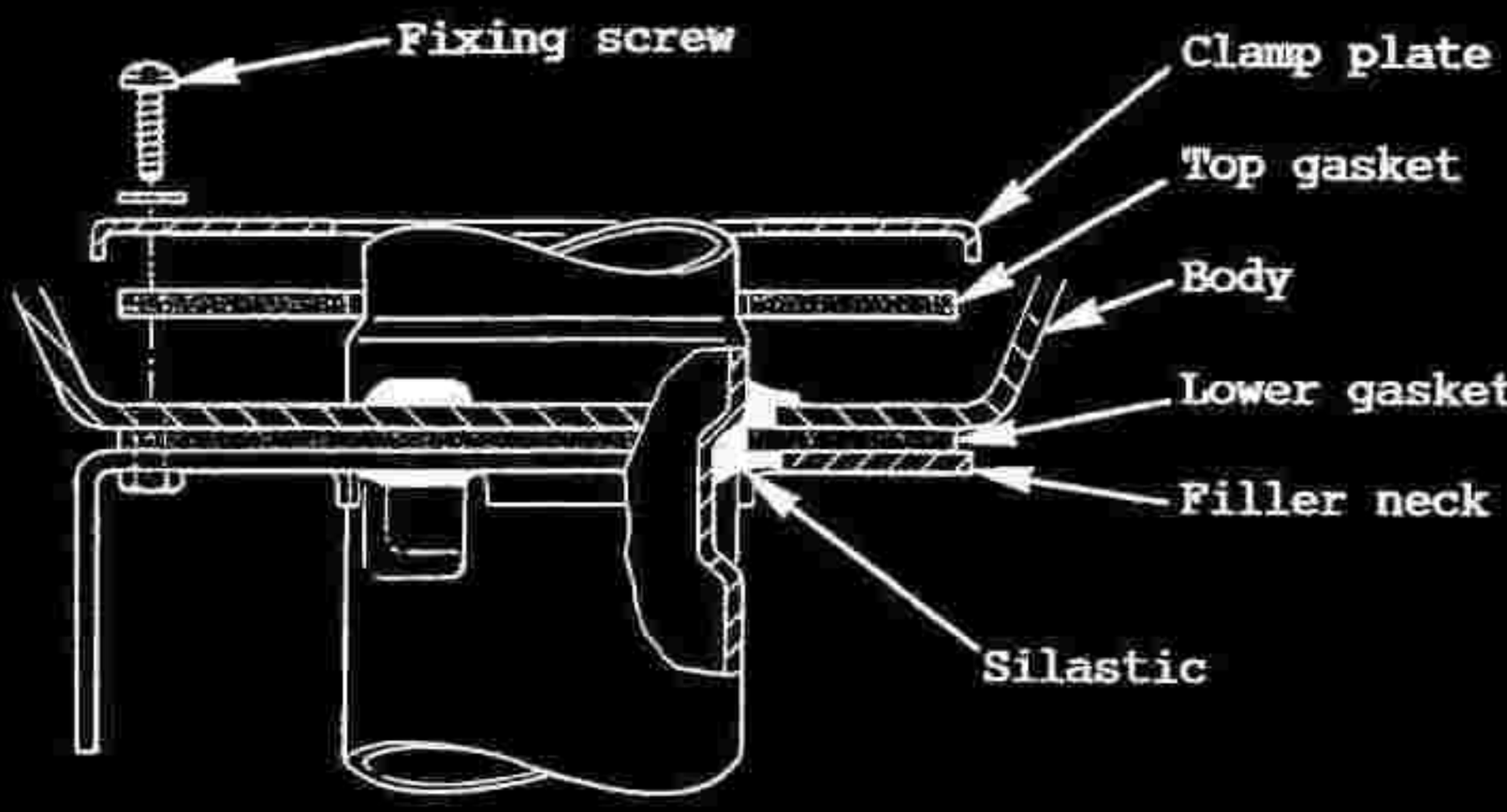
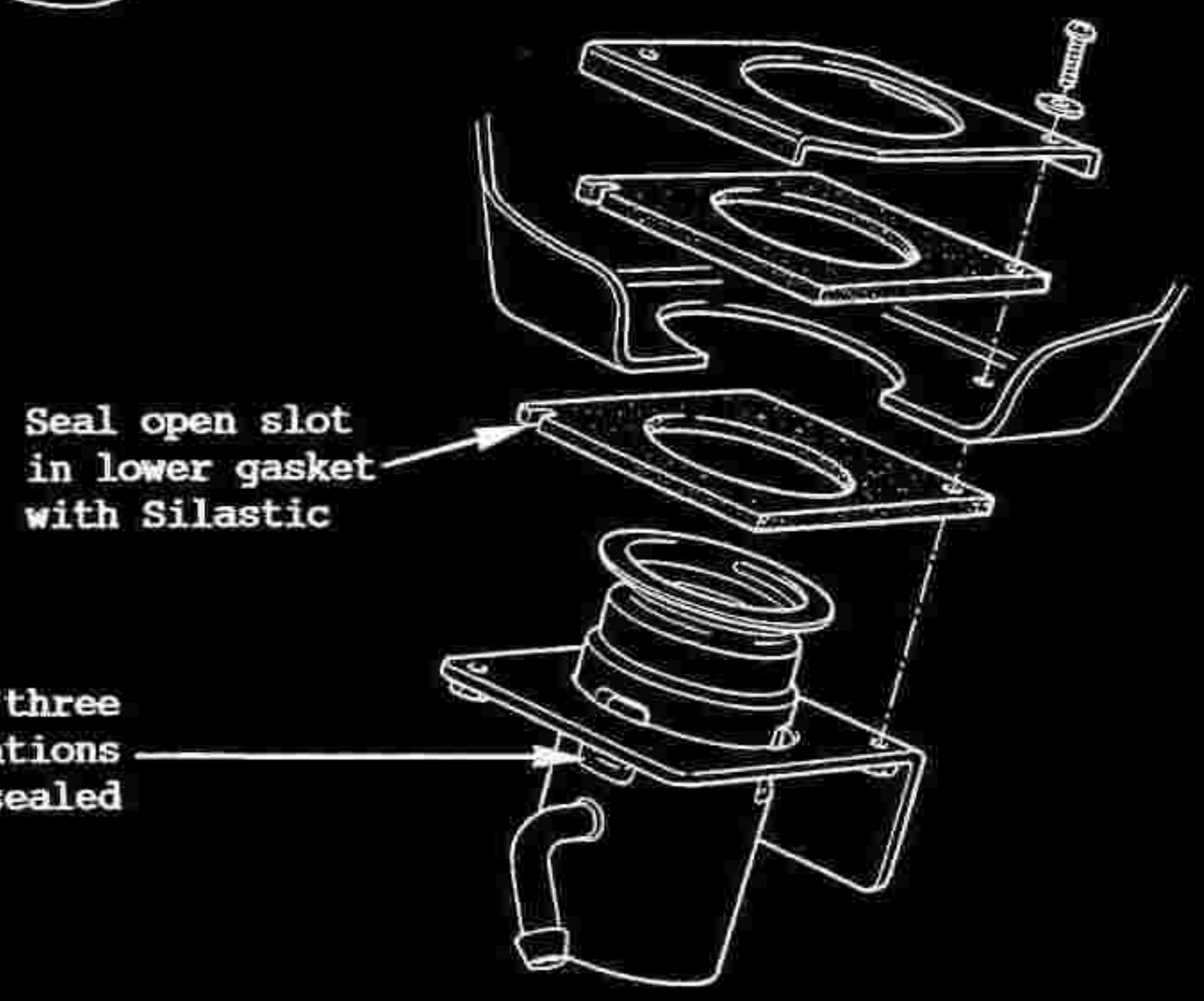
6. Re-assemble the rear suspension referring to Service Notes section DD, and tighten pivot bolts only with the vehicle at ride height. Ensure the toe-in adjustment eccentric match marks are aligned.

7. Before filling the tank, the filler neck should be removed from the body after releasing the hoses and the two retaining screws, and refitted using the following sealing procedure:
   - With a sealing gasket fitted onto the filler neck mounting flange, use black Silastic to seal the three indentations in the neck (from beneath flange) and between the inside edge of the gasket and the filler neck. Also seal the fixing screw open slot in the gasket.
   - Fit the filler neck into position and push upwards against the body whilst using Silastic to seal between the filler neck and the body.
   - Fit the top gasket and plate, and tighten the two screws.
   - Refit the filler and breather hoses.





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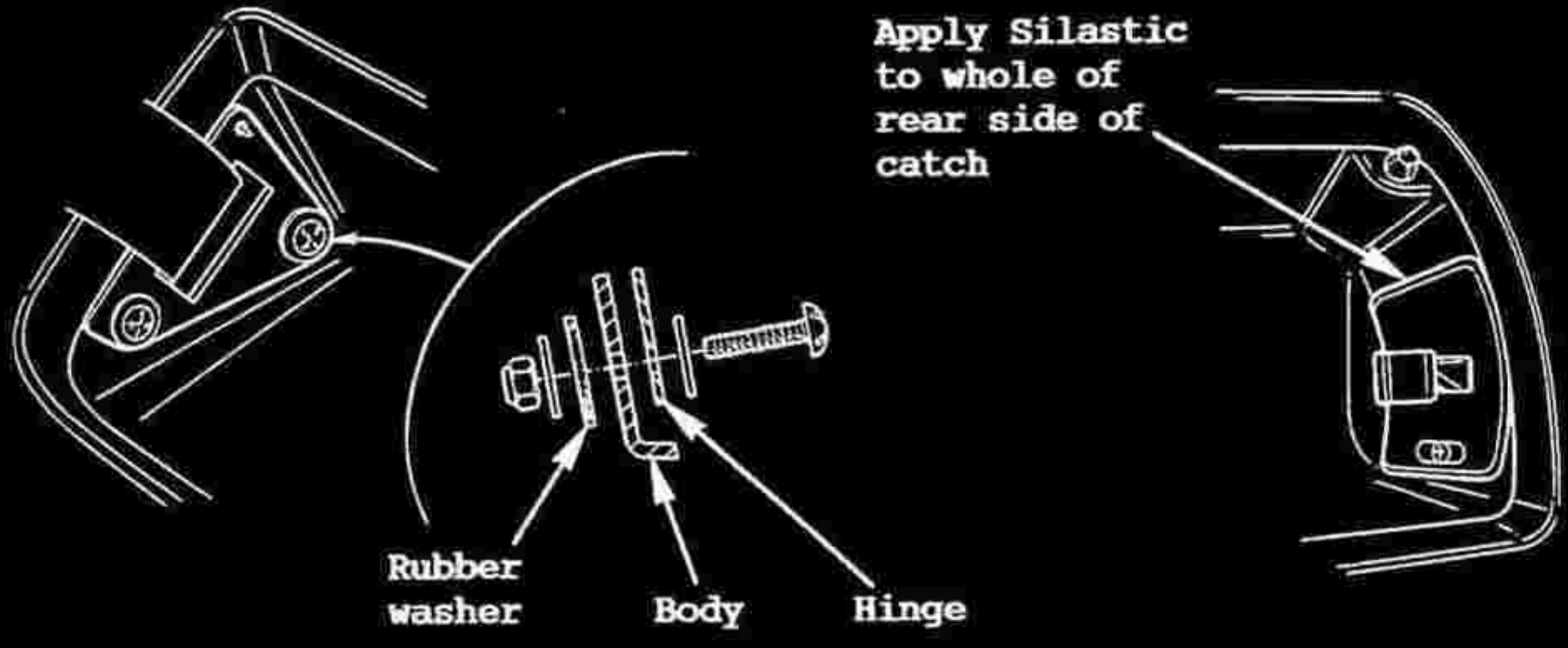
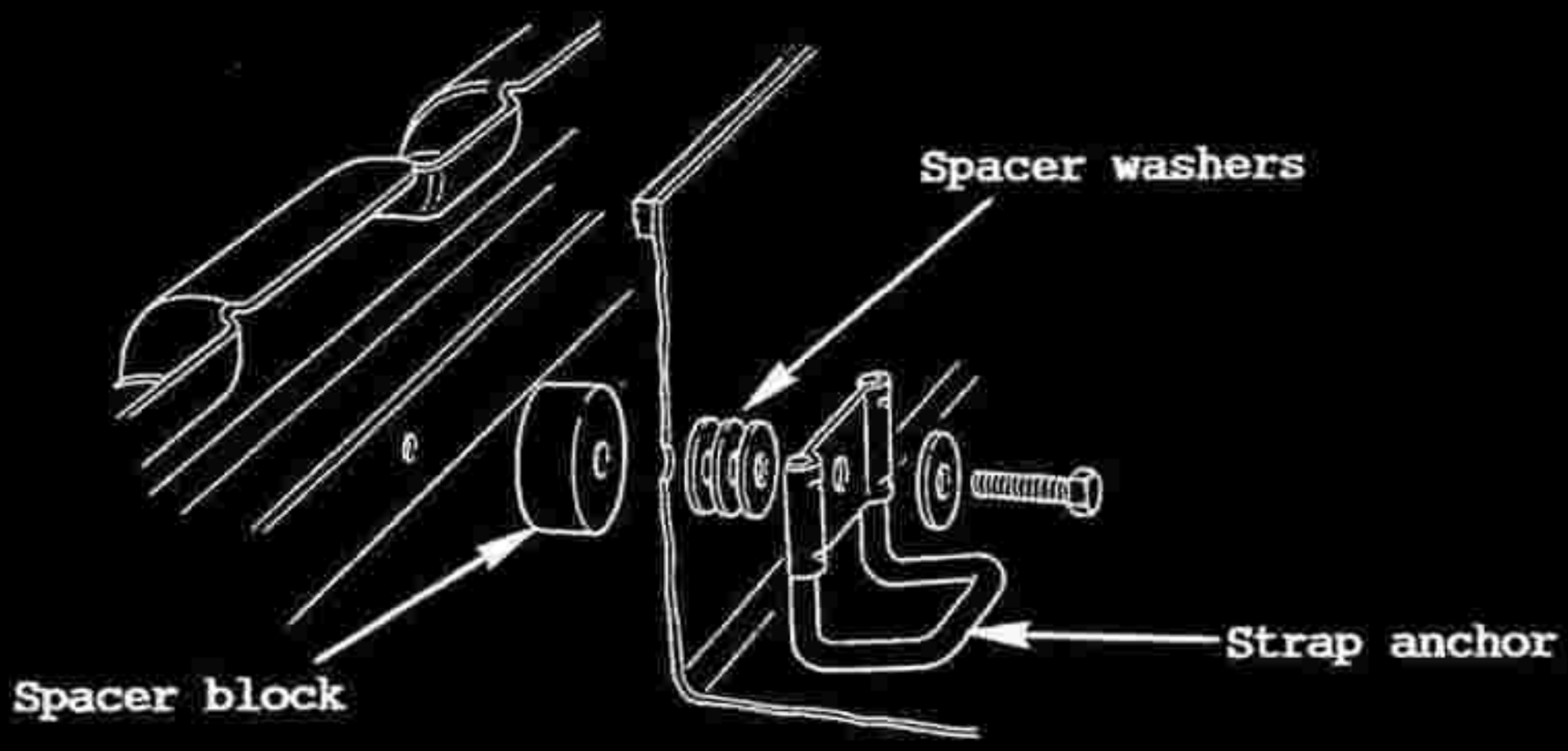
8. Remove the filler flap catch from the body, and apply black Silastic to the whole of the catch flange before refitting. Remove the filler flap hinge fixings, and reassemble using a rubber washer (A082W4115F) between the flat washer and inside of the body.



9. Fill the tank, reconnect battery, reset inertia switch and start engine to check for leaks from the fuel pipe connections.

10. Refit the tank access panel and roof stowage compartment floor in reverse order to removal. When refitting the roof stowage strap front anchor, ensure that the washers and alloy spacer block are fitted correctly. See diagram.



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CHARGES: 2.5 hr/car. Warranty claims marked S/B 1990/16 Class 2 should be submitted.

SERVICE BULLETIN

Date 09.05.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/18

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Additional clipping of headlamp harness.

REASON: To prevent the harness becoming trapped or chafed by the headlamp mechanism.

ACTION: At the next servicing opportunity (i.e. next time the vehicle is on the dealer premesis), check/rectify the headlamp harness clipping on all 1990 model year Elan and Elan S.E. models in the following VIN range:

VIN serial number 6100 to 6221 inclusive.
Check VIN of all dealer stock and demonstrators.

Parts Required

Tie Wrap	A075W6038Z	6 off

- Examine the headlamp harness in each pod well for any signs of chafing or entrapment, and replace if necessary.
- Inspect the clipping of the harnesses, referring to the diagrams below, and if not already fitted, add two tie wraps A075W6038Z to secure the inboard harness to the mounting frame as shown.
- Check that all the 'P' clips are fitted as shown, and check that the harness is neither strained or chafed when the pod is cycled up/down manually using the motor shaft knob.
- If there is no 'P' clip fitted on the pod mounting frame, use a tie wrap A075W6038Z to secure the harness at this point.

CHARGES: 0.7 hr per car. Warranty claims marked S/B 1990/18 Class 2 should be submitted.

Diagrams overleaf.....

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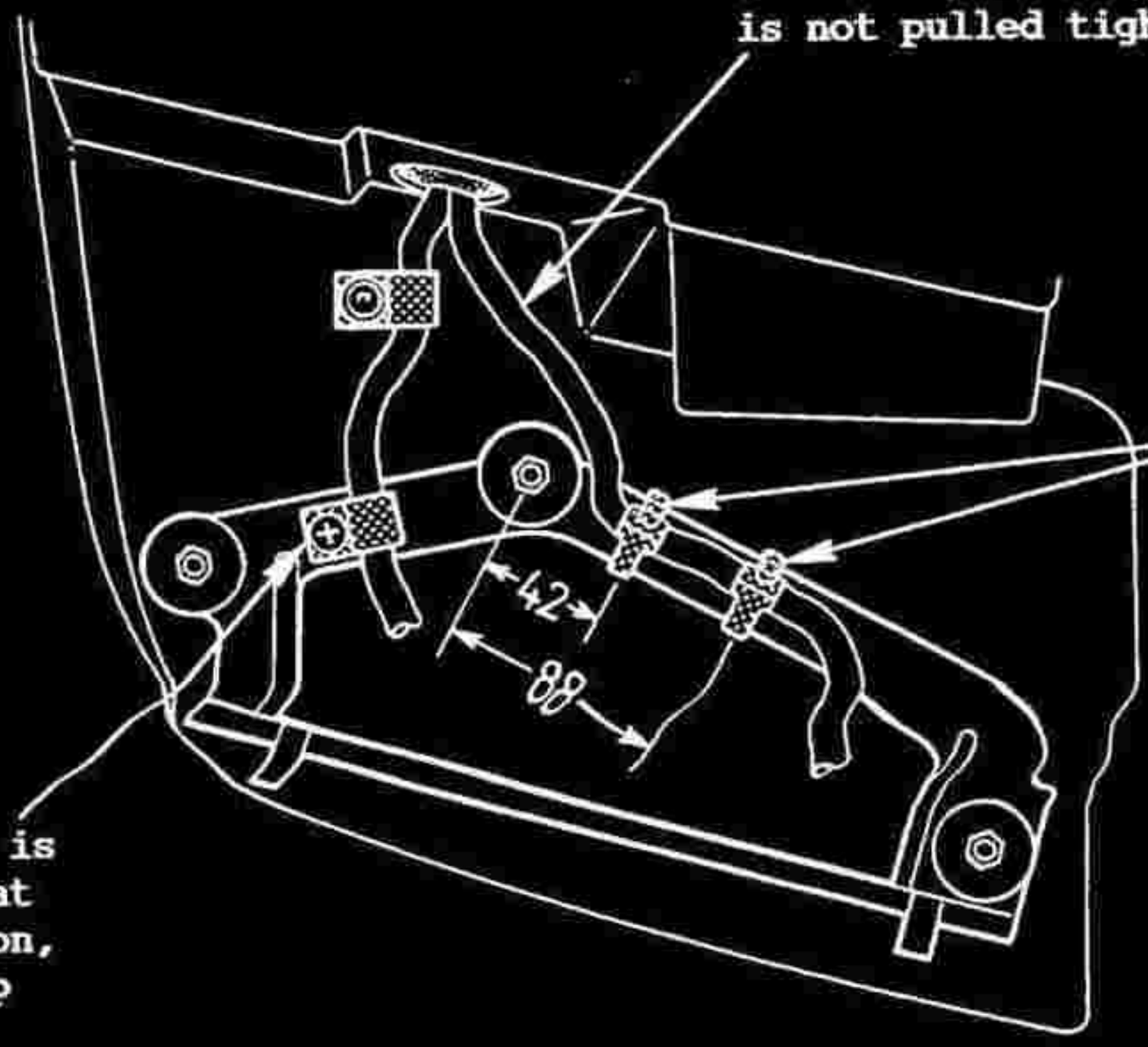
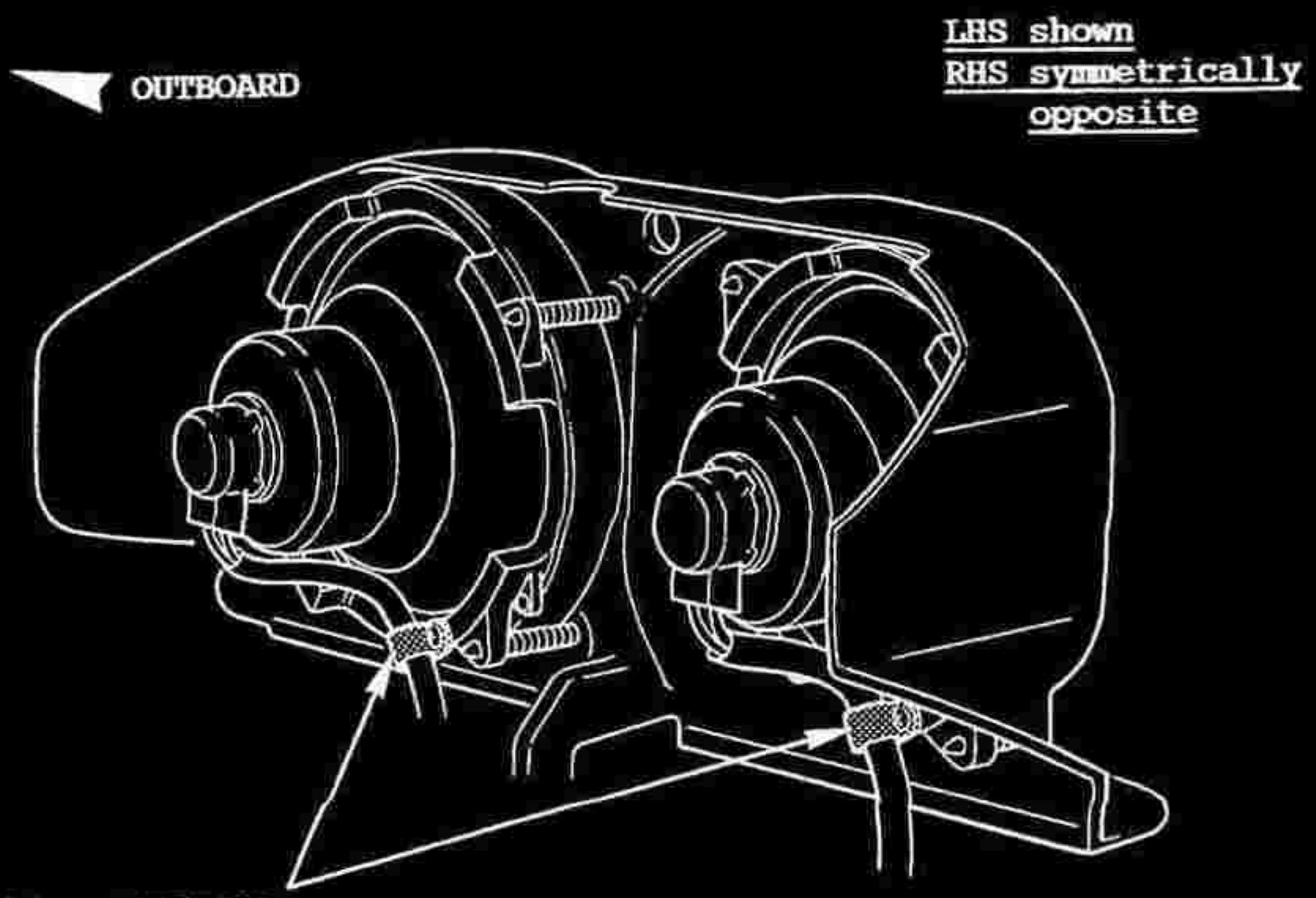

Check this part of harness is not pulled tight
Tie wraps A075W6038Z
42
88
Check this part of harness is not pulled tight when headlamps are raised
If 'P' clip is not fitted at this position, use tie wrap A075W6038Z



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SERVICE BULLETIN

Date 09.05.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/19

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Identification and replacement of early CDL module.

REASON: Specification improvement.
Some early cars, fitted with the 'A' level CDL module can, under certain conditions, require the manual unlocking of the passenger door to regain full CDL operation.

ACTION: At the next opportunity (i.e. next time the vehicle is on the dealer premesis), carry out the following check on all 1990 model year Elan and Elan S.E. models in the following VIN range:

VIN serial number 6100 to 6133 inclusive.
Check VIN of all dealer stock and demonstrators.

Parts Required

C.D.L. Module	C100M0065F	1 off

CDL Check Procedure
Cars fitted with 'A' level modules should have these replaced by 'C' level modules. The CDL module is mounted on a bracket outboard of the steering column and is identified by a part number label. However, because the label is not visible unless the bracket and module are removed, carry out the following operational check to establish which level of CDL module is fitted to the vehicle:

- Shut both doors, and lock using the key in the driver's door.
- Lift the exterior release handle on the (locked) passenger door, and hold in the lifted position whilst unlocking with the key in the driver's door. This will unlock the driver's door, but will not unlock the passenger door with **either** type of module.
- Lock the driver's door again. Both doors will now be locked.
- Without holding up the passenger door latch handle, unlock the driver's door. Check the status of the passenger door:

Passenger door still locked	-	'A' level module fitted. Door must be unlocked either from inside or with the key before normal CDL operation is resumed.
Passenger door unlocked	-	'C' level module fitted.

To replace the CDL module, proceed as follows:

Continued.....

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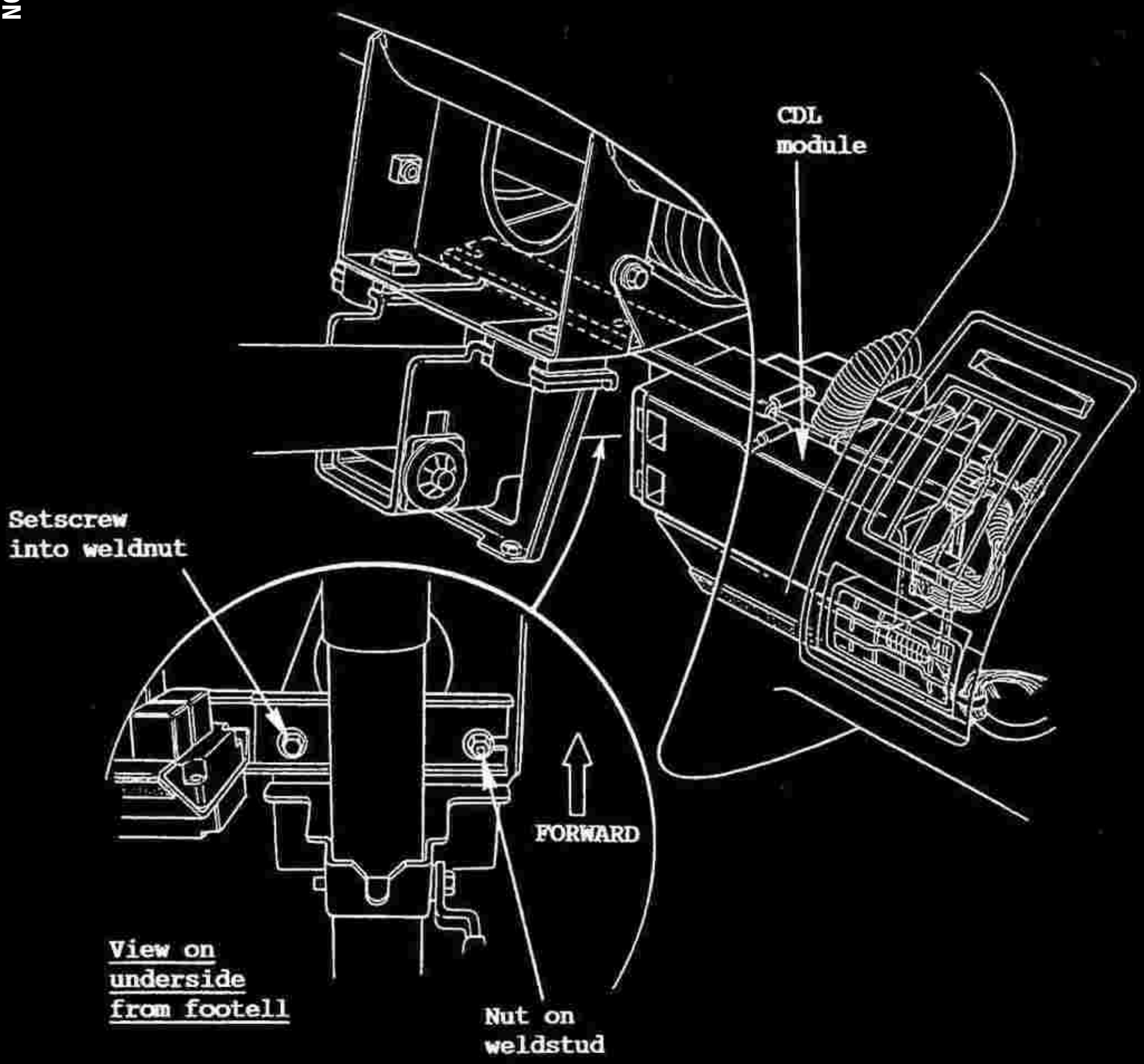
1. Release the CDL unit mounting bracket from the steering column brace: Slacken the nut at the left hand side of the column, and remove the setscrew from the right hand side of the column and withdraw the bracket and module/relay boxes into the footwell.

2. Unplug the electrical connector from the CDL module, and remove the two screws securing the module to the mounting bracket.

3. Fit the new module to the mounting bracket, with the lugs on the module correctly located beneath the lip on the bracket. Retain with the two fixing screws. Plug in the electrical connector.

4. Refit the bracket to the column brace, with the flat and spring washers.

CHARGES: 0.5 hr per car. Warranty claims marked S/B 1990/19 Class 2 should be submitted.



SERVICE BULLETIN

Date 29.06.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/23

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Intoduction of 'single pivot' headlamp mechanism. Revised fettling of right hand pod lower edge.

REASON:
i) Simplified headlamp mechanism and adjustment procedure.
ii) Revised fettling to provide increased clearance between pod and PAS hose.

The fold back ('opera glass') type headlamp mechanism has been superceded by a new system using one piece headlamp pods similar in concept to that used on Excel and Esprit models.

Introduction Point
Single pivot headlamp pods have been fitted on the following vehicles:
VIN serial no. 6221, 6277, 6300 onwards

ACTION: At the next opportunity (i.e. next time the vehicle is on the dealer premises), all cars with the new headlamp system in the following VIN range, should have the fettling of the right hand pod checked/modified as detailed on pages 3/4.

VIN serial no. 6300 to 6310, 6312 to 6319, 6321 to 6327, 6329, 6332, 6334, 6335, 6360, 6364.

Check VIN of all dealer stock and demonstrators.

Description of Single Pivot Headlamp Mechanism

The system comprises the following major components at each side of the car:
- Headlamp Pod; Carries one main beam headlamp (inboard) and one dip beam headlamp (outboard). Reinforcing plate bonded to pod underside carries two pivot ball joints.
- Hinge Bracket; Bolted to topshell. Anchor for pod pivots.
- Headlamp Motor; Mounted via a bracket to the chassis longeron. Bracket incorporates two travel limiting stops for the motor rotary link. A reinforcing bracket ('shear plate') braces the pod mounting plinth on the topshell to the motor body.
- Operating Linkage; Comprises two link rods and a relay lever. The two link rods are identical and have adjustable ball joints at each end. The relay lever pivots on two ball joints at its base. The ball joints are picked up by an anchor bracket bolted to the bottom rear of the pod well in the topshell.

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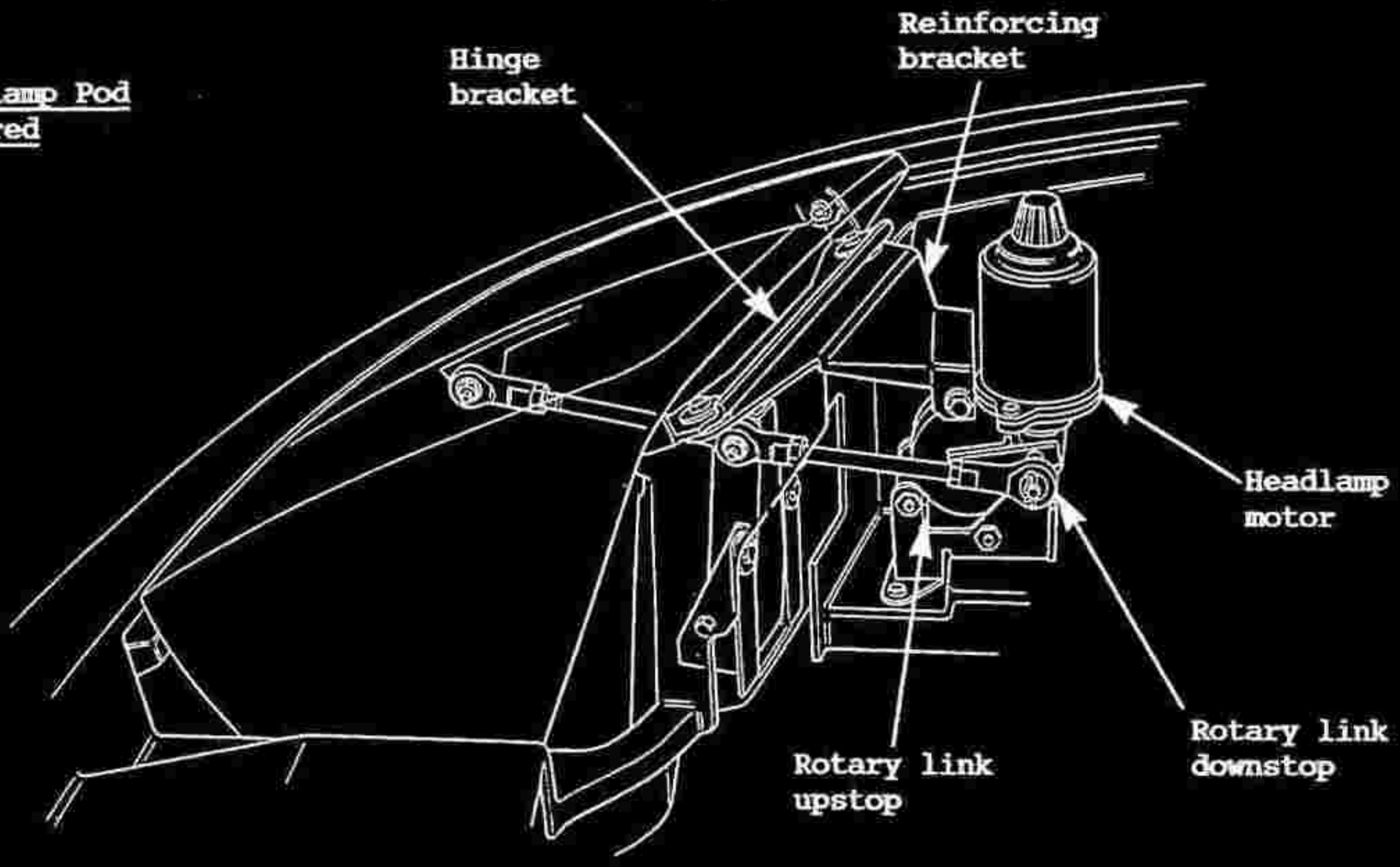
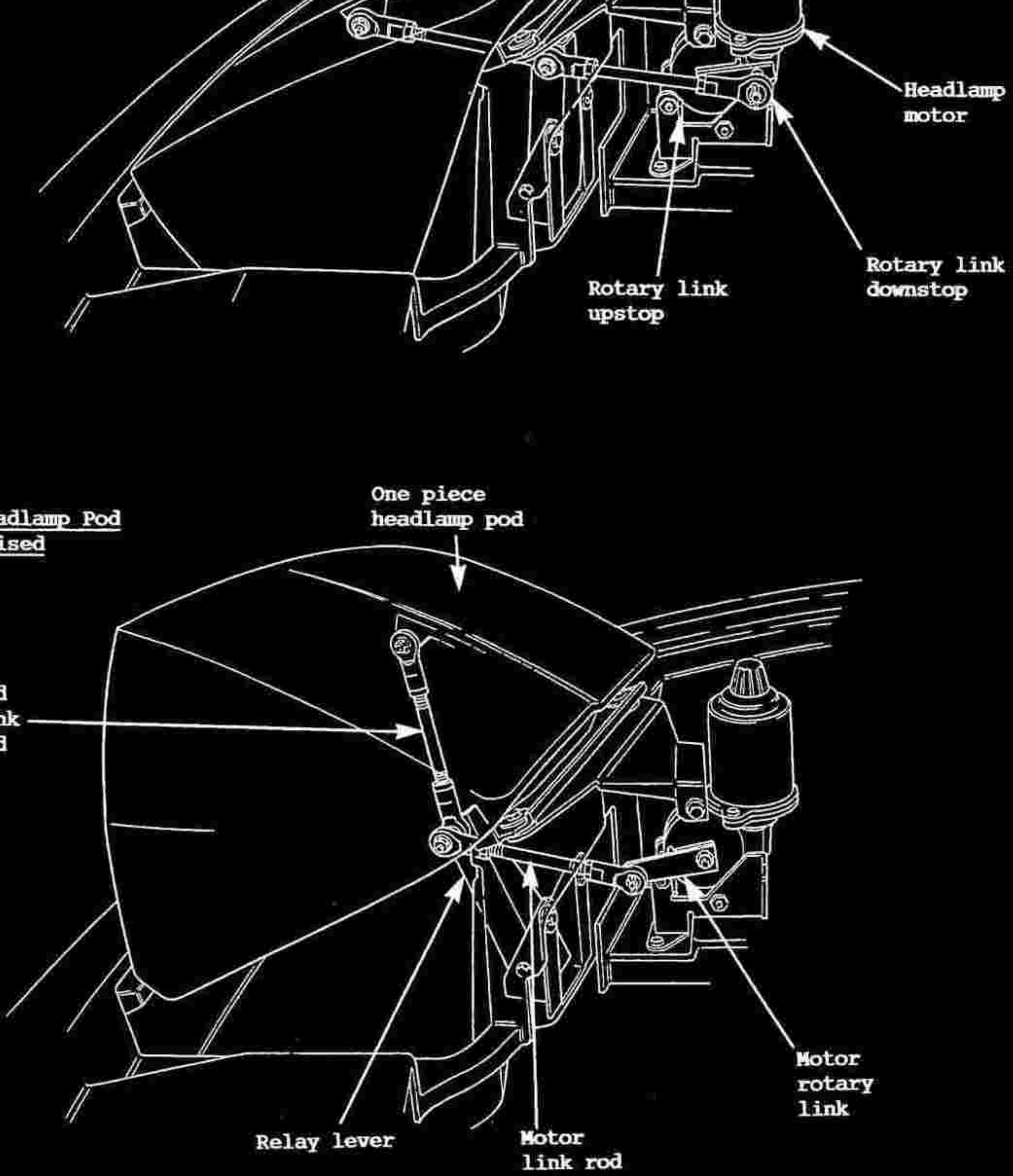
Headlamp Pod Lowered



Headlamp Pod Raised



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Operation: When the headlamps are switched on, the headlamp motor operates and the rotary link moves forwards until it contacts the upstop, when the motor stalls and switches off. In the up position, the pod link and the relay lever form an almost straight load path to hold the pod steady.
Electrical control is similar to the previous system except that:
i) the motor connections are reversed;
ii) the rotary link actuated micro-switches are no longer used i.e. the headlights operate as soon as they are switched on, rather than only when the pods are fully raised. There is no danger of dazzle during pod operation with the new system.

Adjustment: Three basic adjustments of the pod mechanism are required.

1. Pod Shutlines; To adjust the pod shut height and shutlines, slacken the two bolts securing the hinge bracket to the topshell, and add/delete slotted shim washers as necessary to achieve correct pod height and alignment. Position the pod to achieve a 5mm (approx) shut gap between the pod and topshell/ bonnet.

2. Motor Link; Adjust the length of the link between motor and relay lever to 140 mm between ball joint centres, with an equal amount of thread showing at each end of the link. Tighten the locknuts, ensuring that the two ball joints are parallel to each other. This dimension will ensure that the linkage goes just over centre with the pod raised, to provide a rigid prop.

3. With the operating linkage assembled, and the headlamp motor rotary link abutting the down stop, examine the height of the pod front edge. If necessary, adjust the length of the link between relay lever and pod to obtain compatible heights. Tighten the locknuts ensuring that the two ball joints are parallel to each other.

4. Check/adjust headlamp alignment using a beam setter.

Note that the adjustment procedure for the earlier type fold back headlamps is detailed in S/B 1990/11.

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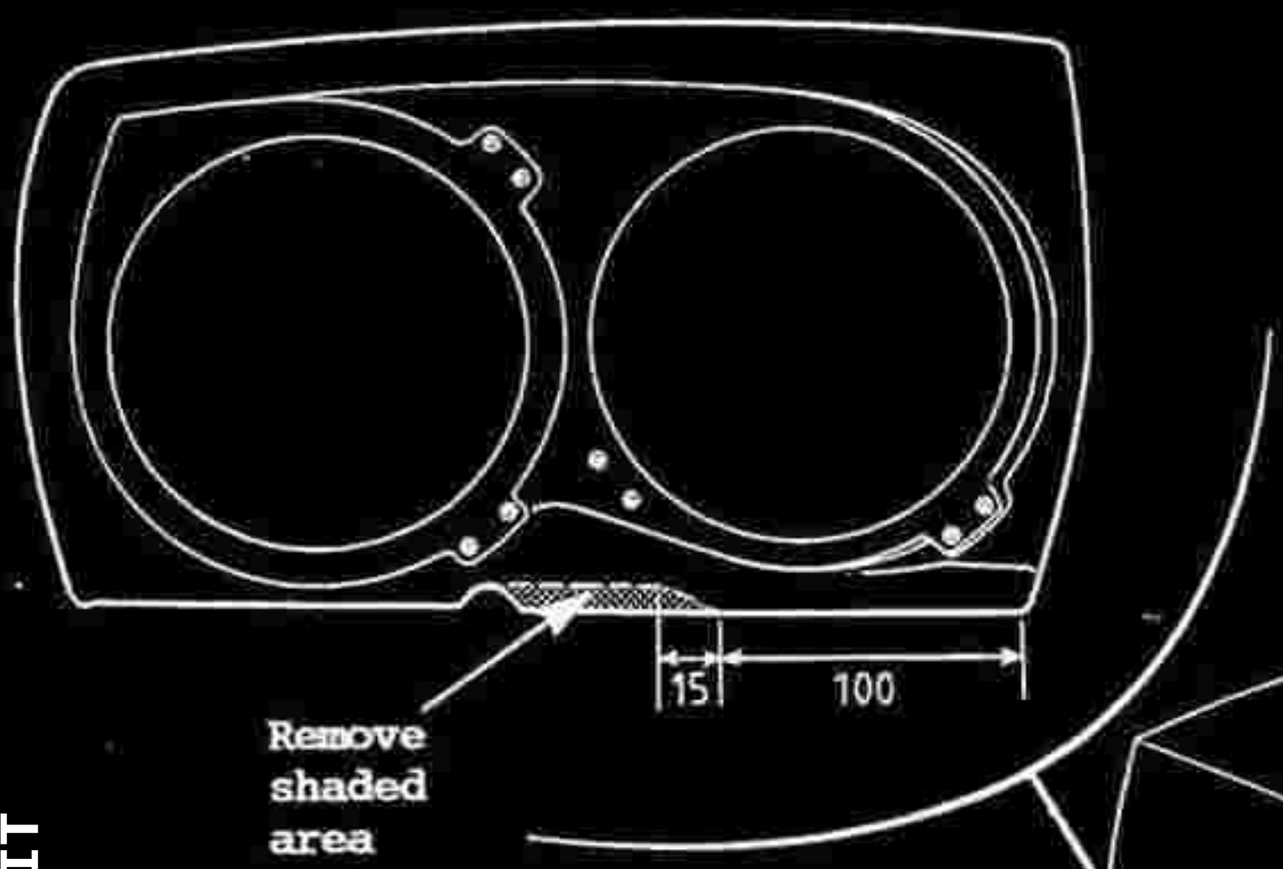
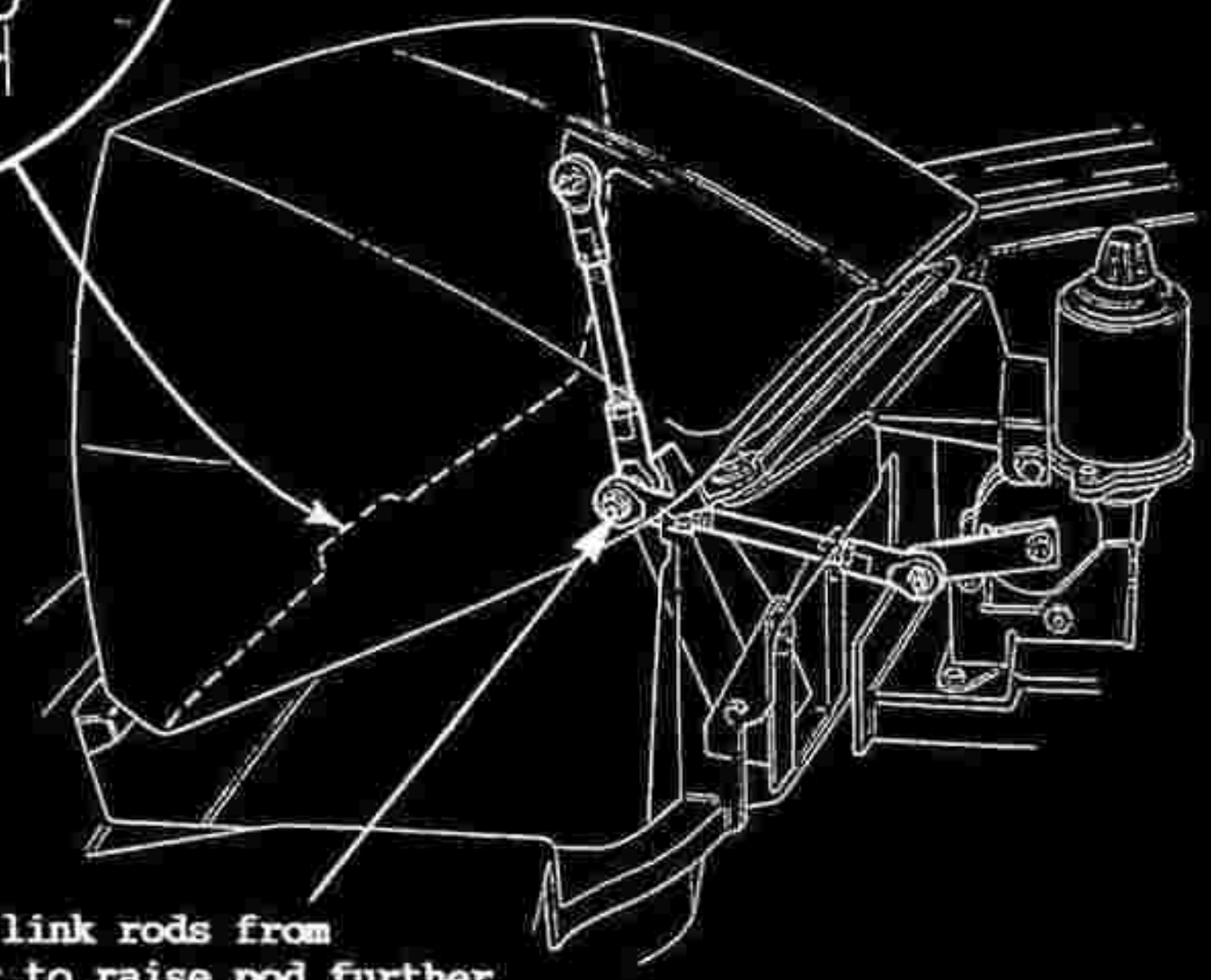
Fettling of Right Hand Pod Lower Edge

On all cars listed in the introduction, raise the right hand pod, and check the profile of the pod lower edge against the template on the following page.
If necessary, the pod link rod should be disconnected from the relay lever to permit the pod to be raised further for improved access, and the lower edge marked out and fettled using a router or similar tool, until the profile matches that of the template. This will provide increased clearance of the pod edge (with pod lowered) to the low pressure power steering hose at the rear of the pod well. Inspect this hose for any signs of chafing, and replace if necessary.

Continued.....





Disconnect link rods from relay lever to raise pod further

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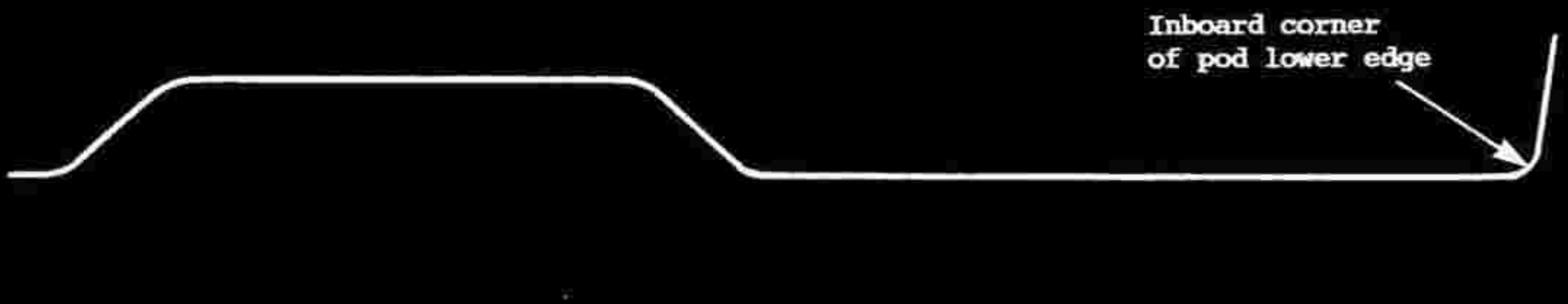
Actual Size Template



After fettling, check that the visual appearance of the lower edge is acceptable, and touch up if required.
Reconnect the link rods to the relay lever in the following sequence:
Relay lever; 4mm spacer; pod link rod; 4mm spacer; motor link rod; flat washer; nyloc nut.

CHARGES: For fettling RH pod: 0.6 hr/car. Warranty claims marked S/B 1990/23 Class 2 should be submitted.

SERVICE BULLETIN

Date 24.08.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/25

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Wiper/washer precautionary checks.

REASON: To advise dealers of the correct torque setting for the wiper arm fixing nut, and of an improved seal for the washer reservoir cap.

ACTION: At the next opportunity (i.e. next time the car is on the dealer premises) on all cars prior to -

i) VIN serial number 6470

- check the torque of the nut securing each wiper arm to its wheelbox spindle, and set to 20 Nm (15 lbf.ft). If re-fitting the arm, do not omit the shakeproof washer between nut and wiper arm.

ii) VIN serial number 6413

- replace the rubber seal in the washer reservoir cap with part number **B100M0206F**. Earlier cars used a seal 1.5mm thick which could prevent the cap from clipping fully down. New seals are 1mm thick. Check that the cap is not split and renew if necessary.

CHARGES: i) 0.2 hr/car. ii) 0.2 hr/car. Warranty claims marked S/B 1990/25 Class 2 should be submitted.

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SERVICE BULLETIN

Date 24.08.90

Model Elan & Elan S.E.

CLASS 3

Number 1990/26

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Door window glass sliders.

REASON: Clarification of assembly.

ACTION: Some early cars were fitted with only three door window glass slider blocks (2 front, 1 rear), before a slider mounting channel was introduced to enable two sliders to be fitted to the rear edge. This channel is bonded to the glass with Betaseal polyurethane adhesive, as used for the windscreen on all Lotus models. If ordering a service replacement door window glass for an Elan, it is recommended that a rear slider mounting channel be ordered at the same time. If replacing the glass on a car fitted with only three sliders, order additional parts (marked *) to enable four sliders to be fitted.

Parts List

Ref.	Description	Part No.	Qty/Door
1	Door Glass, RH (bronze)	B100B0112F	1
2	Door Glass, LH (bronze)	B100B0111F	1
*3	Mounting Channel, rear sliders	A100B0946F	1
4	Plastic Bush (glass pin)	C100B0115F	3
5	Screw, M4x15 Csk Skt, bush fixing	A100W7079F	3
*6	Nut, M4 Nyloc, channel to glass	A075W3049F	1
*7	Boss, slider mounting, 12mm	B100B0537F	3
8	Boss, slider mounting, 8mm	B100B0536F	1
*9	Spacer Washer, lower rear boss	A075W4014Z	1
10	Rubber Washer, front boss	B100B0535F	2
*11	Slider Block, door glass	A100B0669F	3
12	Slider Block, door glass, upper front	A100B1097F	1
*13	Screw, M4x6, slider fixing	A100W5136F	4
*14	Washer, slider fixing screw	A075W4062F	4
*15	Roller, slider block	A100B1089F	5
	Permabond F201, adhesive	A100B6008V	A/R
	Permabond A905, surface conditioner	A912E6759V	A/R
*	Betaseal Kit	A075B6158F	A/R

Assemble the components as shown in the diagram noting the following points.

i) Ensure that the slider mounting channel is securely bonded to the rear edge (concave side) of the glass using the cleaner, primer and adhesive supplied in Betaseal Kit A075B6158F. The channel should be parallel with the glass rear edge.
ii) Apply Permabond A905 to the threads of the plastic bushes and slider bosses, and Permabond F201 to the threads of the corresponding screws.
iii) Apply petroleum jelly to the sliders and rollers before fitting the glass into the door.

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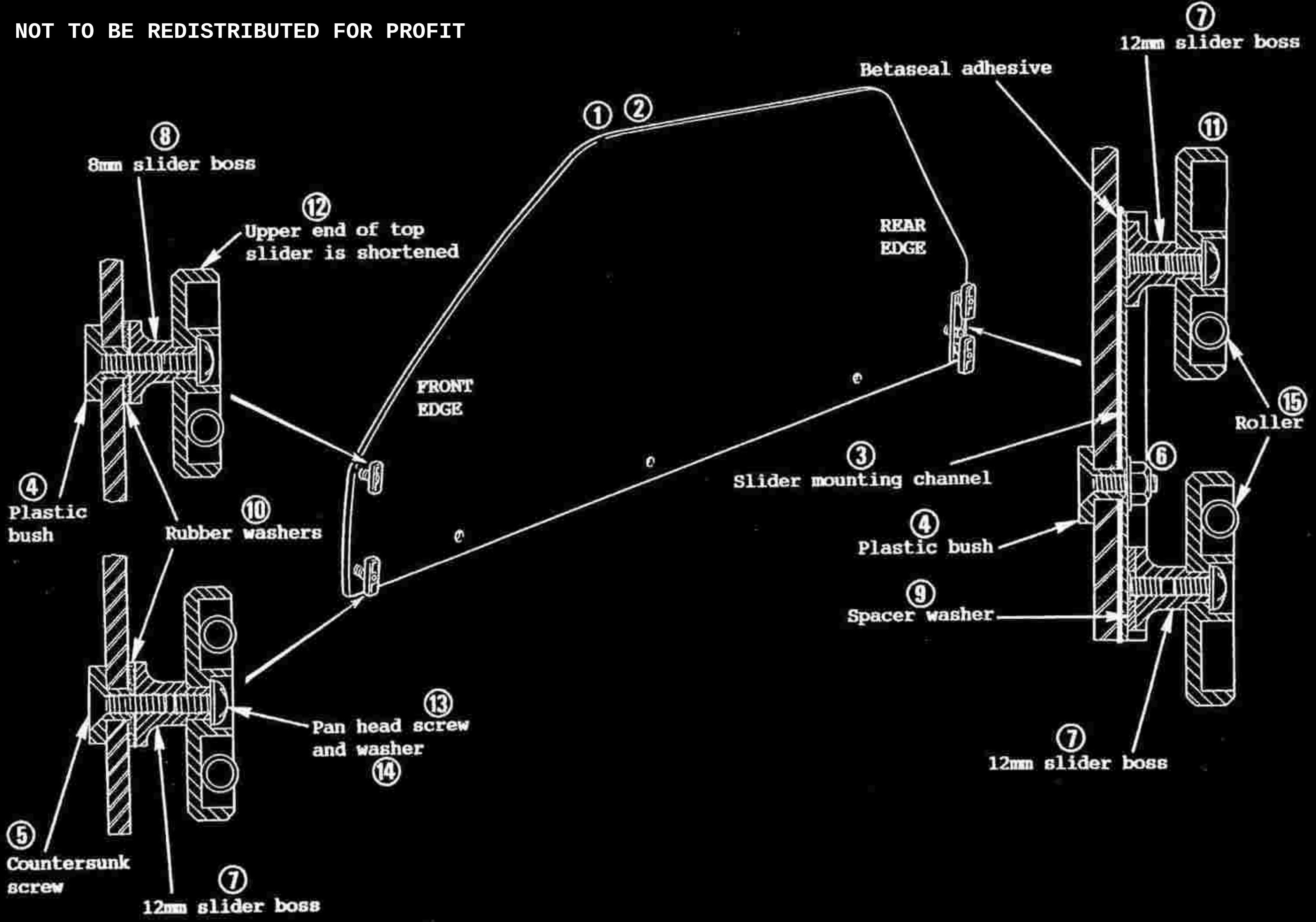

SERVICE BULLETIN

Date 24.08.90

Model Elan & Elan S.E.

Number 1990/27

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Alternative engine oil specification.

REASON: Restricted availability of preferred specification.

ACTION: If the preferred engine oil specification of 10W/30 is not obtainable locally, it is permissible to use an alternative oil as listed in the table below:

Manufacturer	SAE Viscosity Above -20°C	SAE Viscosity Below -20°C	API	CCMC
Preferred				
Various	10W/30	5W/30	SF/CD or SG	G2 or G3
Alternatives				
Various	15W/40	5W/30	SF/CD or SG	G2 or G3
Mobil 1 Rally Formula	5W/50	5W/50	SG	G3

An updated 'Recommended Lubricants' page in section OE of the Elan service notes manual will be issued shortly.

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SERVICE BULLETIN

Date 17.10.90

Model Elan & Esprit

CLASS 3

Number 1990/30

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Introduction of revised VIN serial number sequence.

REASON: To increase sequence capacity.

ACTION: Unit numbers for 1991 and subsequent model year Elan and Esprit models, will restart the VIN serial number sequence at the start of each new model year.

Elan
Unit numbers for 1990 M.Y. Elan models commenced at VIN serial number 6100.
Unit numbers for 1991 M.Y. Elans commenced at VIN serial number 6000.
Serial number sequences for each subsequent model year will also commence at 6000, so that reference must always be made to VIN character 10 to identify the model year before considering the serial number.

Example
VIN: S C C 1 0 0 X T 1 **M** H D 1 6 0 0 0

Character 10: L = 90 model year
M = 91 model year
N = 92 model year

Esprit
All 1991 M.Y. Esprit variants share the same VIN serial number sequence, commencing at 0001. This will also apply to all subsequent model years.

Where necessary, all future references to VINs in service literature will prefix the serial number (last 4 digits) with the model year identifier (character 10).
e.g. L 6134, M 6072 etc.
For a complete explanation of the VIN coding, see introductions to Elan Service Notes manual A100T0327J, and Esprit Service Notes manual B082T0327J.

Note
The above applies only to Elan and Esprit models. The Excel VIN sequence remains unchanged.

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SERVICE BULLETIN

Date 17.10.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/31

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Fitment of single piece horn mounting bracket.

REASON: Improved durability.

ACTION: At the next opportunity (i.e. next time the car is on the dealer premises), on all **'90 model year** cars prior to VIN **L 6333** (refer to S/B 1990/31), replace the two existing horn brackets with the new one-piece design.

Parts Required

Description	Part No.	Qty
Bracket, horns mounting	B100B0948F	1
Rawlnut, M6	A075W6140F	3
Rubber Washer	A036L6019Z	3
Setscrew, M6 x 20	A075W1030Z	3
Washer, flat	A075W4015Z	3

1. Remove the right hand front wheelarch liner.

2. Release each horn from its mounting bracket, and remove the two brackets from the oil cooler duct.

3. Using a 13mm diameter drill, open up the two horn bracket fixing holes in the top of the duct, and insert an M6 Rawlnut (A075W6140F) into each of the holes.

4. Mark up the position of the horn bracket lower mounting hole 21mm forward of the centreline of the wheelarch liner outboard fixing hole. Drill to 13mm diameter, and fit an M6 Rawlnut.

5. Elongate the top front fixing hole in the new mounting bracket to align with the rawlnut positions in the top of the duct (Use the old bracket as a pattern).

6. Fit the bracket into position using a flat washer beneath the head of each setscrew, and a rubber washer between the bracket and each Rawlnut. Tighten the fixings. Fit the two horns to the bracket and position with their outlets facing downwards.

7. Refit the wheelarch liner and paint a white cross on the underside of the front edge of the liner where it wraps beneath the spoiler.

CHARGES: 1.0 hr/car. Warranty claims marked S/B 1990/31 Class 2 should be submitted.

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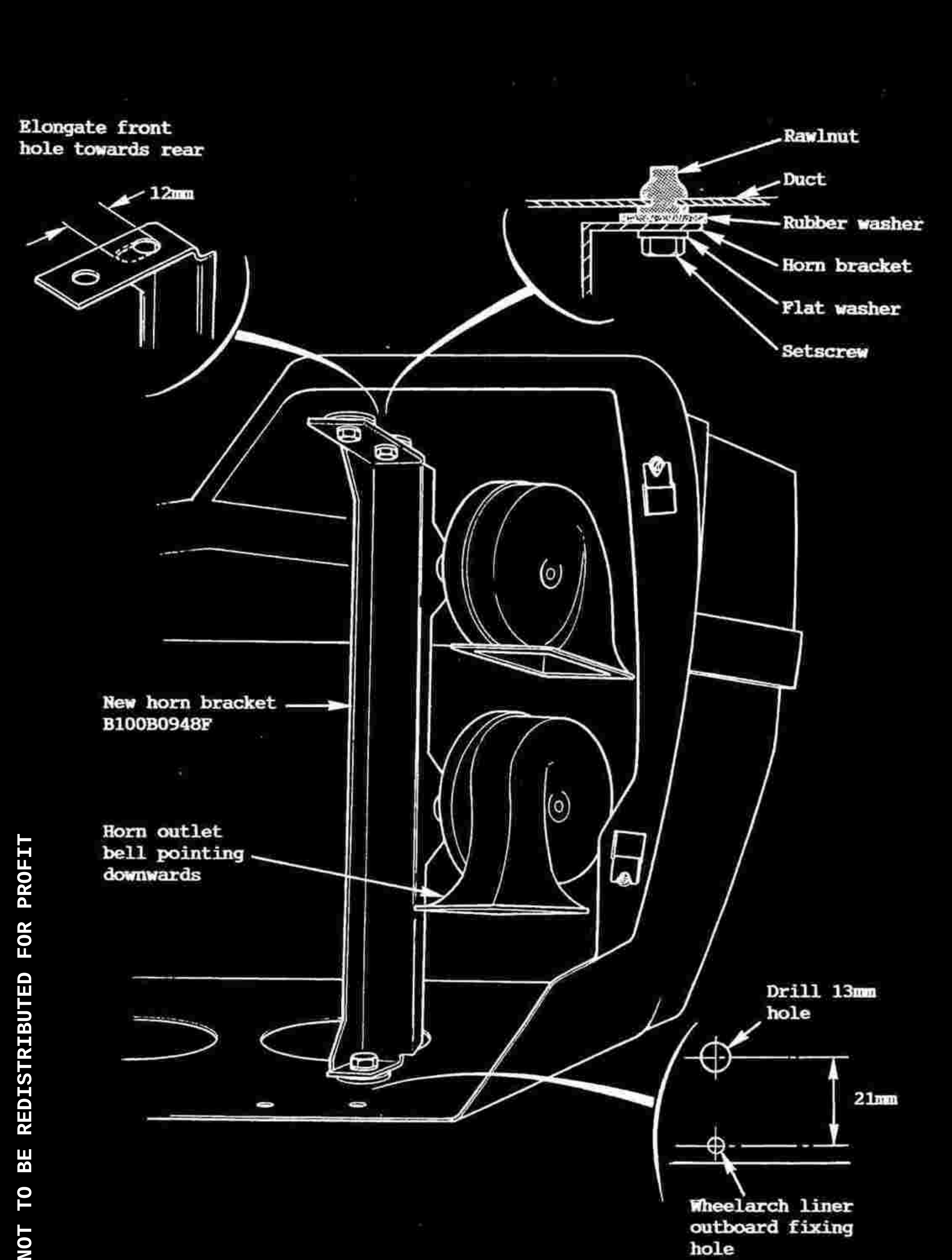

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SERVICE BULLETIN

Date 17.10.90

Model Esprit & Elan

CLASS 3

Number 1990/33

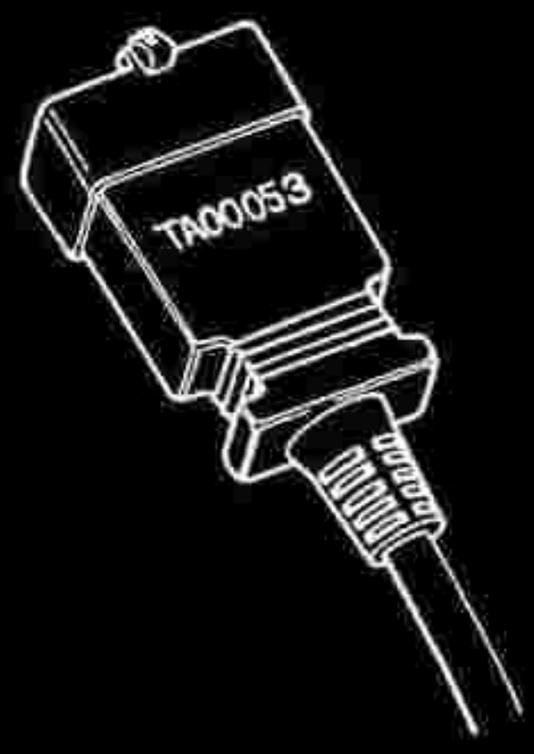
Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Introduction of new 'Tech 1' connector lead, and ABS 'Tech 1' cartridge.

REASON: Greater all model compatibility, and inclusion of ABS brakes on '91 M.Y. Esprit range.
The 'Tech 1' is the electronic scanner tool used to diagnose faults in the engine management, supplementary inflatable restraint (USA), or ABS brake systems. The connector lead used between the Tech 1 and the Esprit's ALDL connector can, under certain circumstances, cause some problems with data retrieval on the M100 Elan. A new connector lead (T000T0897/2) overcomes this problem.
A new manual (Section JF) will be despatched shortly covering the braking system on 1991 M.Y. onwards Esprit models. These cars are fitted with Delco Moraine/NDH ABS IIIA anti-lock brakes, for which fault diagnosis may be performed using the Tech 1 tool in conjunction with a new ABS cartridge (T000T1115/1).

ACTION: Connector Lead

The new Tech 1 connector lead **T000T0897/2** is identified by **'TA00053'** embossed in gold lettering on the ALDL end connector.
This new lead will shortly be despatched to all dealers, who on receipt, should discard the old lead (T000T0897) to prevent confusion.



Tech 1 Cartridge

The new ABS cartridge **T000T1115/1** is for the '91 M.Y. Esprit range brake system only, and will shortly be despatched to all dealers. The cartridge is identified by **'LOTUS 1991 BRAKE'** and 'Part Number TK02380' printed on the label.

Note: To clarify the position with Tech 1 cartridges, only one other cartridge is required - **T000T0898/3** which is already held by dealers. This includes engine management for all electronic injection Esprits and Elans, plus the supplementary inflatable restraint (SIR) system used on USA vehicles. The /3 cartridge is identified by **'LOTUS 89-90 ECM "PLUS"** ' and 'Part Number TK02370' printed on the label. Earlier cartridges (T000T0898 & T000T0898/2) should be discarded.

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SERVICE BULLETIN

Date 06.11.90

Model Elan & Elan S.E.

CLASS 2

Number 1990/34

Service Manager	Service Reception	Supervisor	Parts Manager

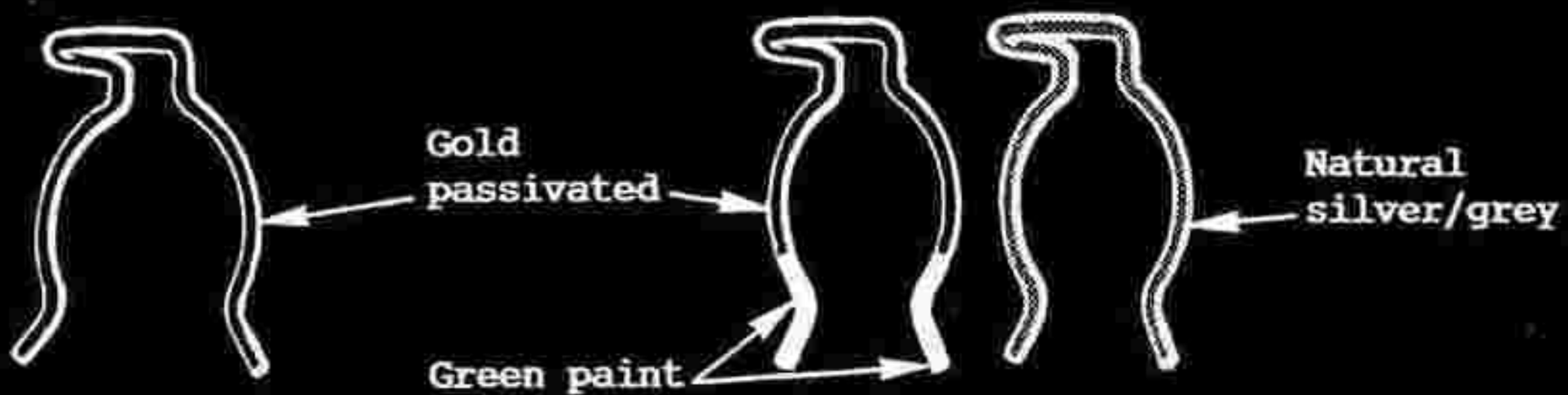
TITLE: Identification of gearchange cable abutment clips.

REASON: To ensure that the preferred type are fitted for optimum cable security.
The outer sheaths of the two gearchange cables are retained at both transmission and gear lever abutment brackets by a spring wire clip. Three different specifications of clip A100F6060F have been used.

ACTION: At the next routine service or earlier suitable opportunity on the following cars:
- '90 M.Y. from VIN **L 6493**) refer to S/B 1990/30
- '91 M.Y. prior to VIN **M 6104;**)

check the gearchange cable abutment clips at the transmission end, and identify which specification are fitted:

Non Preferred Type **Preferred Types**



If non preferred type clips are found to be fitted at the transmission end, it should be assumed that these also will be fitted at the gear lever end, and all four clips should be replaced with preferred types (A100F6060F).
To replace the clips at the gearchange lever end, it is necessary to release the transmission end of the cables, before removing the centre tunnel trim panel, and withdrawing the gearchange mechanism/cable assembly into the car sufficiently to permit access. Full details may be found in Service Notes section FF.5.

CHARGES: 1.0 hr/car. Warranty claims marked S/B 1990/34 Class 2 should be submitted.

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SERVICE BULLETIN

Date 01.07.91

Model All

CLASS 3

Number 1991/15

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Introduction of new body paint process.

REASON: To provide a high lustre gun finish with improved metallic matching capability.
A new paint process by Du Pont uses a basecoat/clear acrylic polyurethane system to provide a high lustre paint finish straight from the spray gun, meeting General Motors paint quality standards without the necessity to flat and polish each panel.
In addition, the basecoat/clear system enables consistent metallic matching to be achieved in service repair work.
Dealer personnel will shortly be invited to the factory for a full presentation of the new system.

ACTION: All cars from the following introduction point have been produced using the new paint process:

Elan
VIN: M 8080, 8082, 8083, 8086, 8088, 8091, 8100, 8103 to 8107, 8110 onwards (June '91)

Esprit
VIN: M 0354 (June '91)

Excel
VIN: M 3108 (June '91)

Full details of service repair procedures using Du Pont materials will be issued shortly.

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SERVICE BULLETIN

Date 01.07.91

Model Elan & Elan S.E.

CLASS 3

Number 1991/16

Service Manager	Service Reception	Supervisor	Parts Manager

THIS BULLETIN SUPERCEDES S/B 1990/34 WHICH SHOULD BE MARKED UP ACCORDINGLY

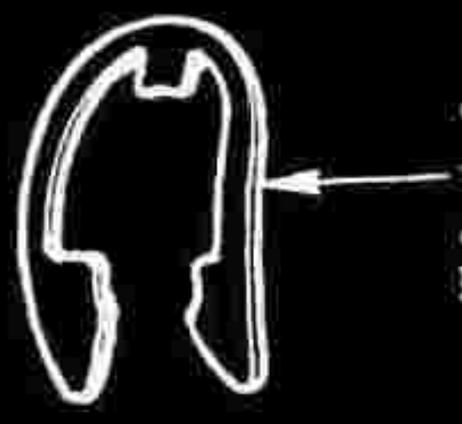
TITLE: Introduction of revised gearchange cable abutment clips.

REASON: Improved gearchange cable security.
The outer sheath of each of the two gearchange cables, is retained at each end by a spring clip. The spring wire clip used until recently, has been replaced by a dished 'C' clip which offers greater assurance of correct fitment, and increased resistance to dislodgement from the effects of vibration or vigourous gearchange operation.

ACTION: If an old type gearchange cable abutment clip is found to be dislodged, or if for any other reason access to the clips is available, it is recommended that all four of the clips be replaced by the latest type. Note that the new clips are fitted with the concave side towards the abutment bracket.

Old spring wire clip
A100F6060F

New dished 'C' clip
A100F6291F



All dealer parts stock of the old type clips should be returned to Lotus Parts Dept. for F.O.C. exchange.

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SERVICE BULLETIN

Date 01.07.91

Model Non-catalyst Elan S.E.

CLASS 3

Number 1991/17

Service Manager	Service Reception	Supervisor	Parts Manager

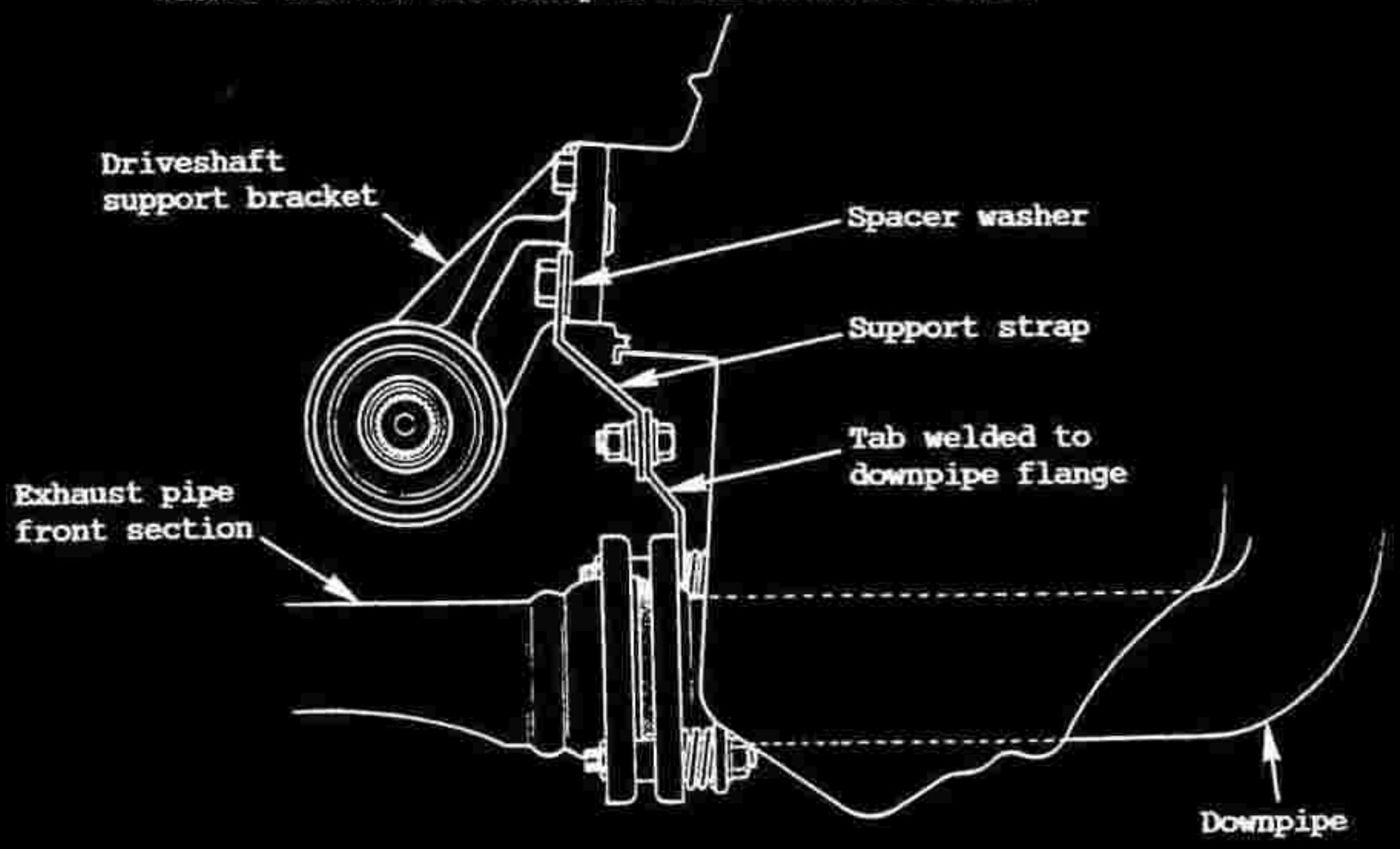
TITLE: Introduction of exhaust downpipe support strap on non-catalyst Elan S.E. (Turbo).

REASON: Improved durability.
The addition of a support strap between the rear flange of the front downpipe, and the back of the cylinder block on non-cat Elan S.E. models, helps to distribute vibration stresses over a wider base and improves downpipe durability.

ACTION: If replacing a front downpipe on a non-catalyst Elan S.E. not already equipped with a downpipe support strap, it is recommended to fit the latest type downpipe and strap as follows:

Parts Required	Part No.	Qty
Downpipe	C100S0023F	1
Support Strap	A100S0053F	1
Setscrew, M8 x 25, strap/downpipe	A075W1039Z	1
Washer, flat, M8, strap/downpipe	A075W4020Z	2
Washer, spring, strap/downpipe	A075W4036Z	1
Nut, M8, strap/downpipe	A075W3021Z	1
Spacer Washer, M10, strap/engine	A075W4024Z	1

Fit the strap as shown in the diagram, using the lower of the two M10 bolts securing the driveshaft support bracket to the cylinder block. Note that because the support bracket fixing hole has a slight counterbore, it is most important to fit the M10 spacer washer between the strap and driveshaft bracket.



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SERVICE BULLETIN

Date 05.07.91

Model Non-USA Elan

CLASS 3

Number 1991/19

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Introduction of revised rear licence plate plinth.

REASON: Commonisation and ease of maintenance.
An unfaired rear licence (number) plate mounting plinth, which is required by some markets, and which dispenses with the clear acrylic cover, has been commonised across most non-USA territories in order to simplify licence plate fitment, unify styling and reduce owner maintenance.

ACTION: The new style plinth has been introduced at the following VIN:
VIN: M 8264 (June '91)

Fitting Rear Licence Plate
The licence plate may be fitted to the new type plinth using either double sided tape, or screws through the plinth and body (suitably sealed) as required.

Fitting New Type Plinth
The new type plinth is secured to the body using the existing 4 screws along the top edge, and double sided tape along the lower edges.
If it is necessary to fit a new type plinth to an earlier car, the following procedure should be used:

Parts Required

Plinth, rear licence plate mounting	A100U0495K	1
Double Sided Tape, plinth fixing	C075U6071V	1090mm
Gasket, licence plate lamp	A100U6050S	2

1. From inside the boot, remove the boot floor and rear lamp covers, pull up the bottom of the rear transom carpet and remove the 4 screws securing the lower edge of the licence plate plinth. Remove and retain the 4 screws and washers securing the top edge of the plinth, and remove the plinth. Clean any tape residue from the body.

2. Remove each of the two licence plate lamps by releasing the two nuts and the harness connector plug.

3. Open up the lamp fixing holes to 8mm diameter, fit a foam gasket on each lamp body, and refit the lamps but do not tighten the fixings.

4. Use tank tape or similar to seal off the ventilation holes in the body transom beneath the lamps, and seal the 4 fixing holes along the lower edge of the transom with Silastic.

Continued.....

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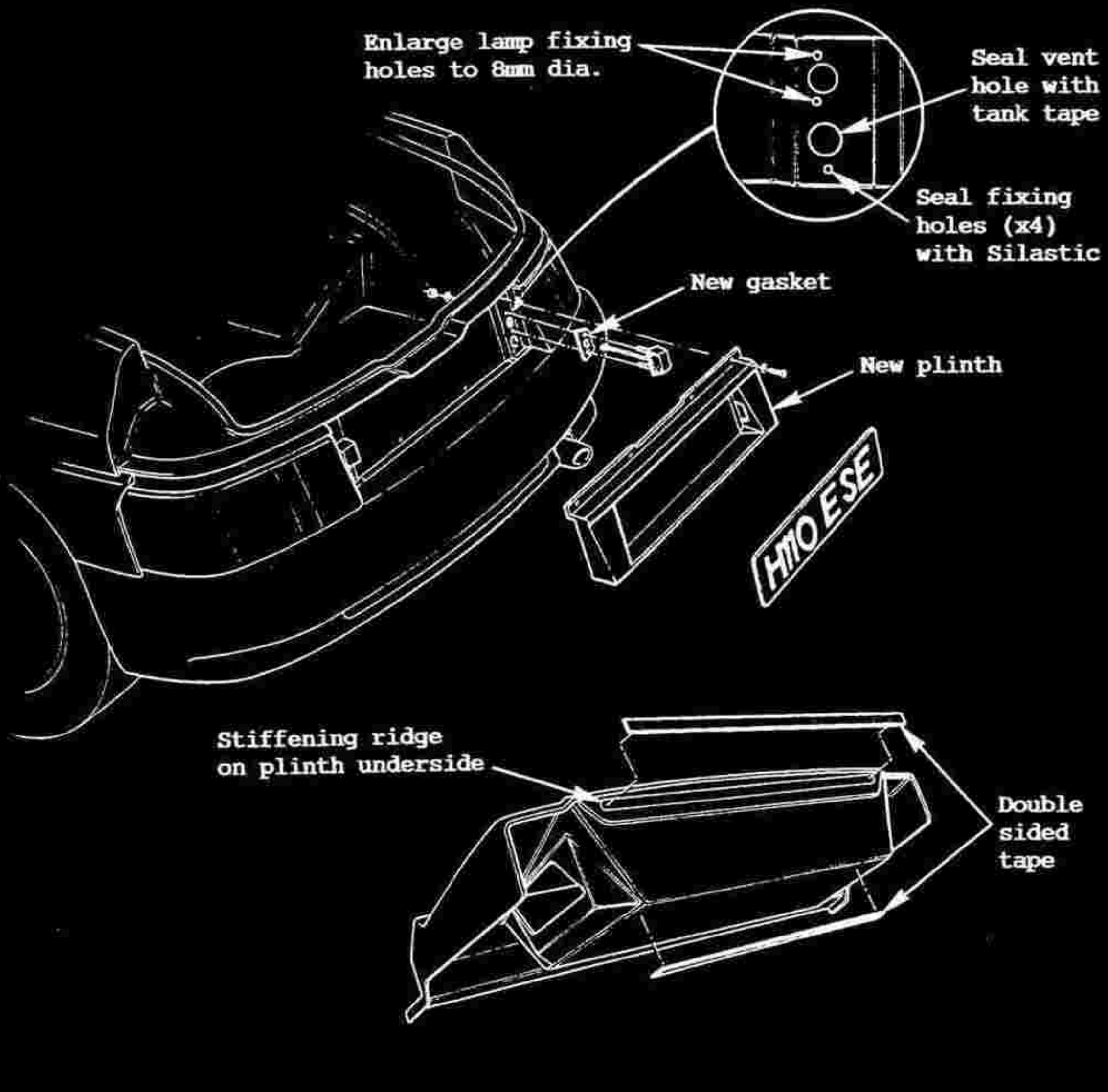
5. Ensure that the mating surfaces on the plinth and body are clean and dry before applying two lengths of double sided tape to the new plinth:
   - one strip along the stiffening ridge on the underside of the plinth;
   - one strip across the lower edge of the vertical surface.

   Do not peel off the tape backing strip at this stage.

6. Test fit the new plinth and check the alignment of the plinth with the rear lamps, lamp top finishers, rear bumper, and plinth top edge fixing holes. Check that both licence plate lamps can be aligned with the plinth cut-outs, with no part of the lamps protruding. Fettle or adjust the position of components as necessary to achieve optimum alignment of all parts.

7. Peel off the adhesive tape backing strip and fit the plinth into position, pressing firmly along the bottom edges to ensure full adhesion. Fit the 4 screws and washers along the top edge of the plinth.

8. Position the licence plate lamps, tighten the fixings and plug in the lamp harnesses. Refit the carpet, lamp covers and boot floor.


Enlarge lamp fixing holes to 8mm dia.
Seal vent hole with tank tape
Seal fixing holes (x4) with Silastic
New gasket
New plinth
Stiffening ridge on plinth underside
Double sided tape

SERVICE BULLETIN

Date 04.10.91

Model Elan & Elan S.E. (Not USA)

Number 1991/21

CLASS 2

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Precautionary replacement of chassis longeron positioning bolt.

REASON: Bolts fitted may be below specification.
It has been found that on certain cars, the lower (longer) of the two taper seat bolts used to position each chassis longeron before the six socket head bolts are tightened, may have been from a batch identified as not meeting the correct material specification.

ACTION: At the next opportunity (i.e. next time the vehicle is on the premises), carry out the following procedure on all '91 model year Elans (VIN character 10 = M) with serial numbers listed overleaf. These cars were built between May '91 and August '91. Note that USA vehicles use a different longeron fixing configuration which does not include the suspect bolt.

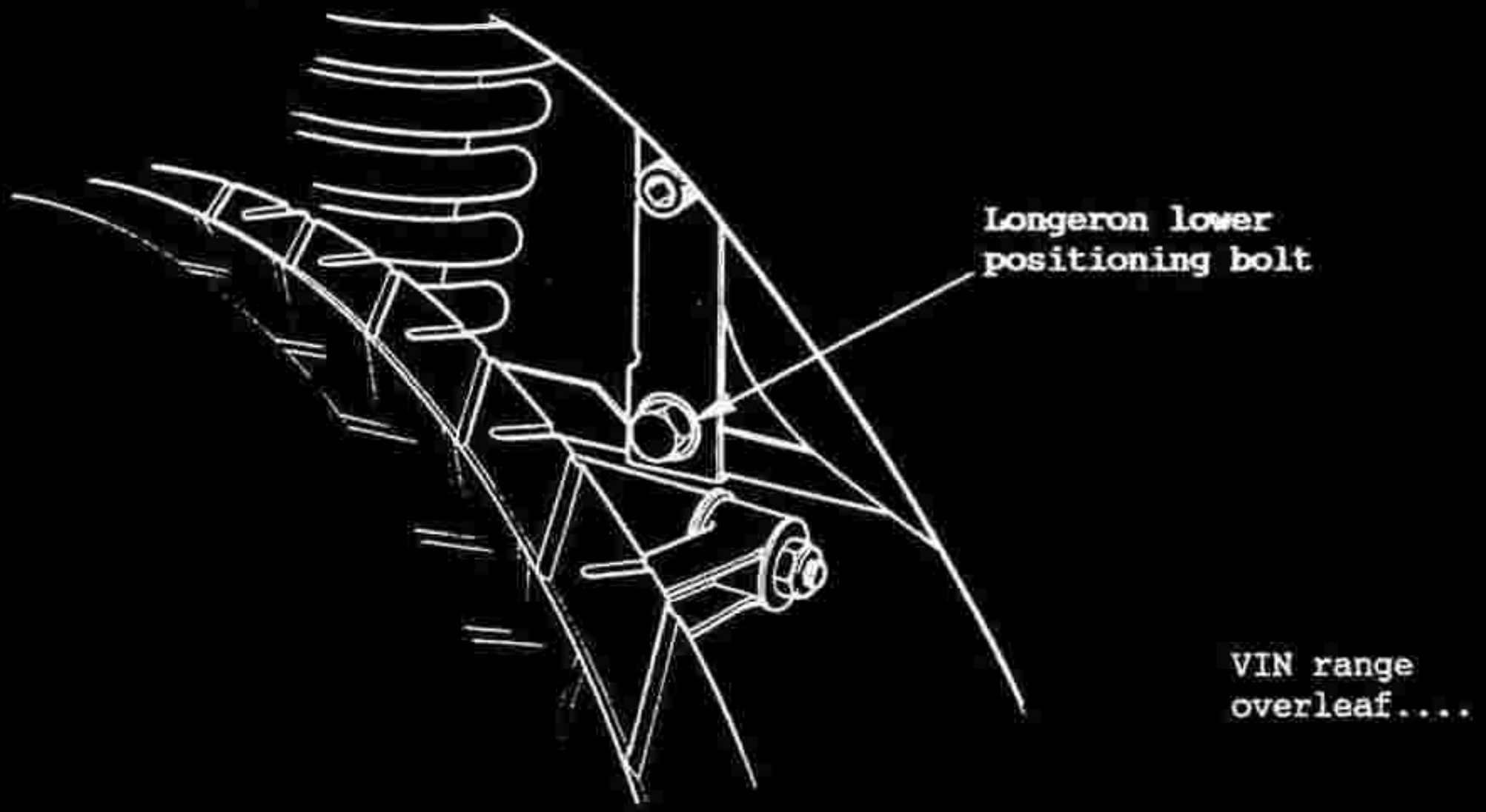
1. With the car on its wheels, turn the steering for improved access to the lower front bolt (hex head) securing the longeron to the chassis. Note that it is not necessary to release the wheelarch liner.

2. Remove the bolt, and replace with a new bolt B100A0438F. Torque tighten to 120 Nm (89 lbf.ft).

3. Mark the head of the new bolt with BLUE paint. Note that the old bolt may have been marked with GREEN paint.

4. Repeat for the opposite side.

CHARGES: 0.2 hr/car. Warranty claims marked S/B 1991/21 Class 2 should be submitted.



VIN range overleaf....

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All cars listed are '91 M.Y. with VIN character 10 = **M**

DOMESTIC

8002	8094	8186	8374	8432	8482
8003	8095	8187	8376	8433	8485
8008	8097	8189	8378	8435	8486
8012	8098	8190	8380	8437	8488
8014	8100	8192	8382	8438	8489
8015	8101	8319	8384	8441	8490
8017	8103	8322	8386	8442	8492
8018	8104	8324	8388	8445	8493
8020	8106	8325	8390	8447	8497
8021	8107	8327	8392	8448	8498
8023	8109	8328	8393	8450	8500
8024	8110	8330	8394	8451	8501
8026	8112	8331	8395	8452	8502
8027	8113	8333	8396	8455	8504
8029	8159	8334	8397	8456	8505
8030	8160	8336	8399	8458	8506
8032	8162	8337	8400	8460	8510
8033	8163	8339	8402	8461	8512
8042	8165	8340	8406	8462	8513
8046	8166	8346	8408	8463	8518
8054	8168	8348	8414	8465	8520
8058	8169	8349	8418	8466	8526
8079	8172	8351	8420	8467	8527
8080	8174	8354	8421	8468	8528
8082	8175	8356	8422	8471	8530
8085	8177	8358	8423	8473	8543
8086	8178	8362	8424	8475	8550
8088	8180	8366	8427	8476	8564
8089	8181	8368	8428	8478	8574
8091	8183	8370	8430	8480	8580
8092	8184	8372	8431	8481	

ITALY

6006	8047	8061	8075	8132	8144
8035	8049	8063	8077	8134	8146
8036	8051	8065	8115	8136	8148
8038	8053	8067	8116	8137	8150
8039	8055	8069	8118	8139	8152
8043	8057	8071	8119	8140	
8045	8059	8073	8121	8142	

FRANCE	SWITZERLAND	GERMANY	SWEDEN	SPAIN/PORTUGAL
8154	8207	8242	8582	8260
8195	8209	8243		
8199	8122	8246		
8201	8124	8249		
8205	8126	8290		
8211	8128			
8227				
8231				
8258				

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SERVICE BULLETIN

Date 09.12.91

Model Elan & Elan S.E.

CLASS 3

Number 1991/24

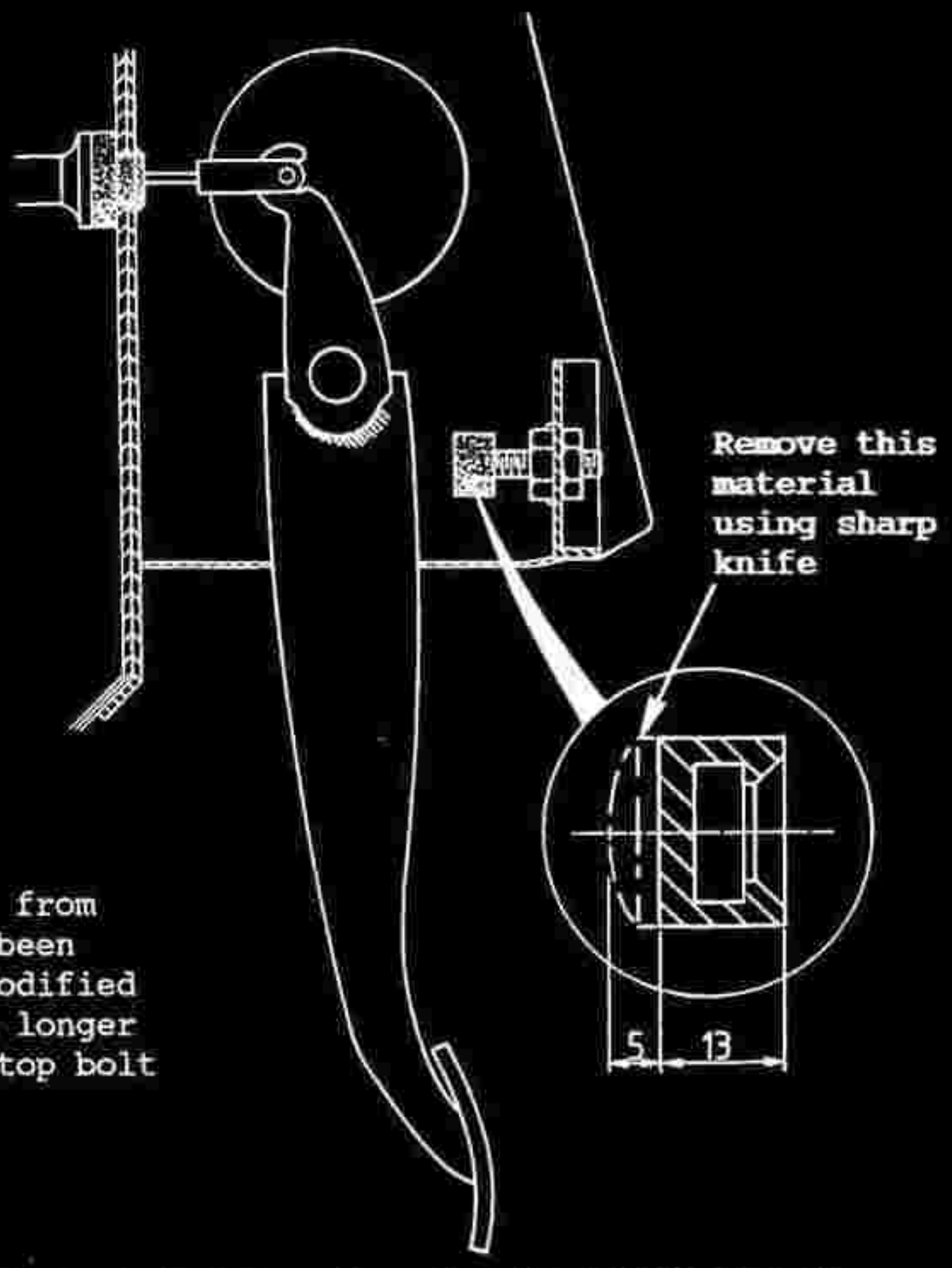
Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Modification of clutch pedal upstop buffer.

REASON: The modified clutch pedal upstop buffer, with reduced compliance, minimises the possibility of the clutch cable becoming inadvertently unhooked from the pedal, especially after rapid pedal release.

ACTION: If the clutch pedal area is receiving attention, or if a cable disconnection has been experienced, it is recommended to modify the pedal upstop buffer in accordance with the diagram below. The correct sequence of clutch and brake pedal adjustment is as follows:

- Adjust the brake pedal pushrod to achieve a small amount of free play at the pedal.
- Adjust the brake light switch to operate the brake lights after approx. 10 mm of pedal pad travel.
- Adjust the clutch pedal upstop (with modified buffer fitted) to set pedal height equal to brake pedal.
- Adjust clutch cable at transmission end to achieve 3 to 6 mm clearance between the transmission lever arm and the cable plastic trunnion.



All '92 M.Y. cars from VIN N 6276 have been fitted with the modified buffer and a 5 mm longer (35 vs 30 mm) upstop bolt A075W1041Z.

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SERVICE BULLETIN

Date 09.12.91

Model Elan & Elan S.E.

Number 1991/25

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Change to switching logic of panel lights.

REASON: The panel lights, previously selected via the main lighting switch together with the sidelamps or headlamps, are now arranged to come on instead with the ignition. This logic has been adopted in order to:

i) speed the daytime demisting of the instrument glasses in humid conditions;
ii) reduce battery drain when parked with sidelamps on.

ACTION: Vehicles from the following changepoint have been built with the harness change incorporated:

VIN N 6251 (approx) October 1991

If it is desired to update an earlier car to the later specification, the following procedure should be used:

Parts Required

Wiring Kit, panel lamps feed	A100M0323S	1 off

1. Remove the steering column shrouds. Slacken the nut and remove the setscrew securing the CDL unit/relay station mounting bracket to the steering column brace and lower the bracket assembly.

2. Remove the heated mirror timer module and rheostat module, and release the four screws securing each of the two 'six way' relay stations to the bracket.

3. Use a jewellers screwdriver or similar to remove the red/white cable from cavity E6 of the rheostat module base. Insulate and tape back.

4. Remove the green cable from cavity F2 of the heated mirror timer module base and cut off the terminal. Add 250mm of 0.5mm² green cable, and terminate the pair of cables with the longer legged spade terminal supplied in the kit. Refit the terminal into cavity F2 of the timer module base.

5. Terminate the other end of the green cable with the remaining spade terminal (shorter legs) and fit into cavity 6 of the rheostat module base. Space tape the cable to the existing harness.

Continued.....

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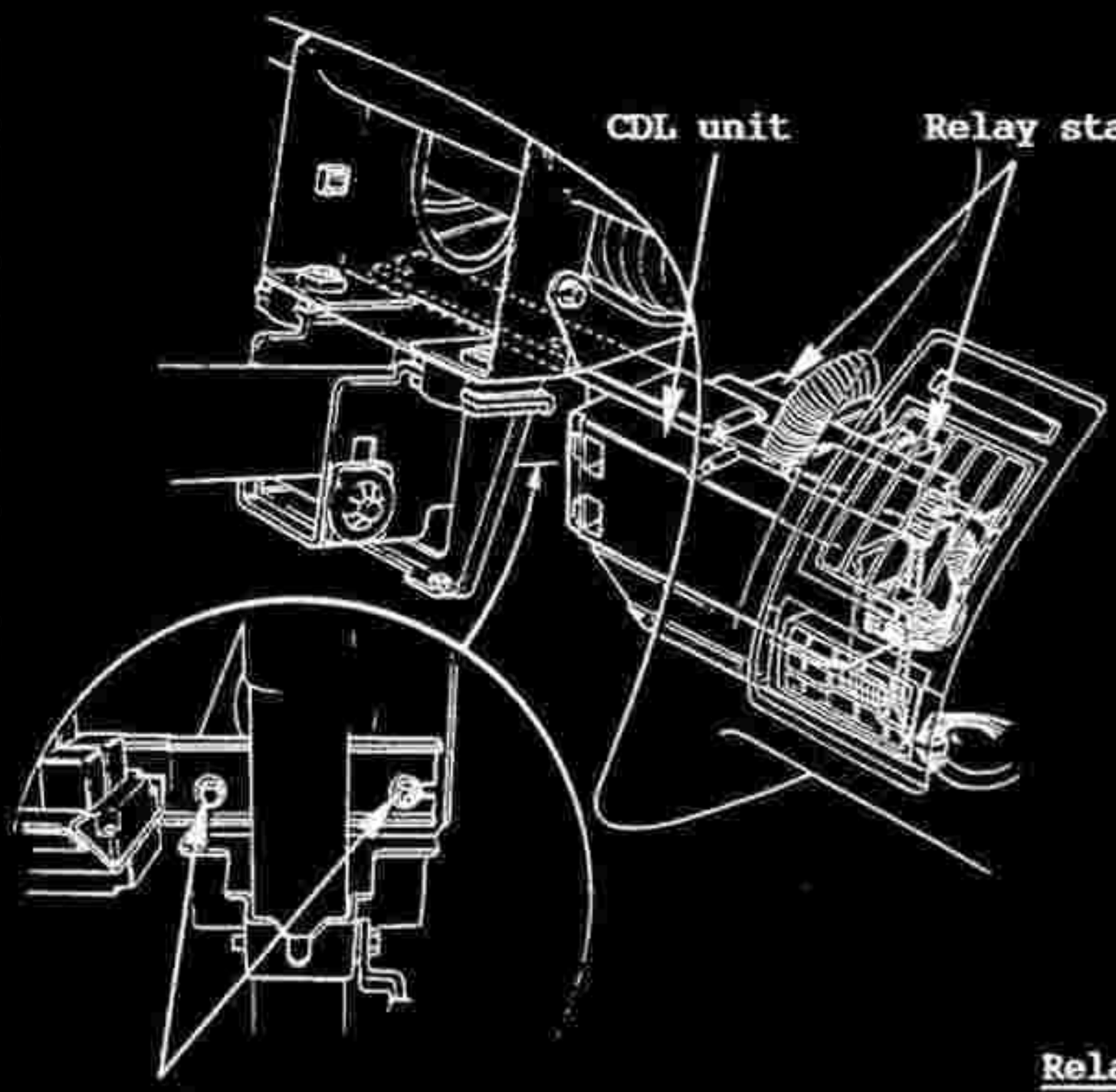
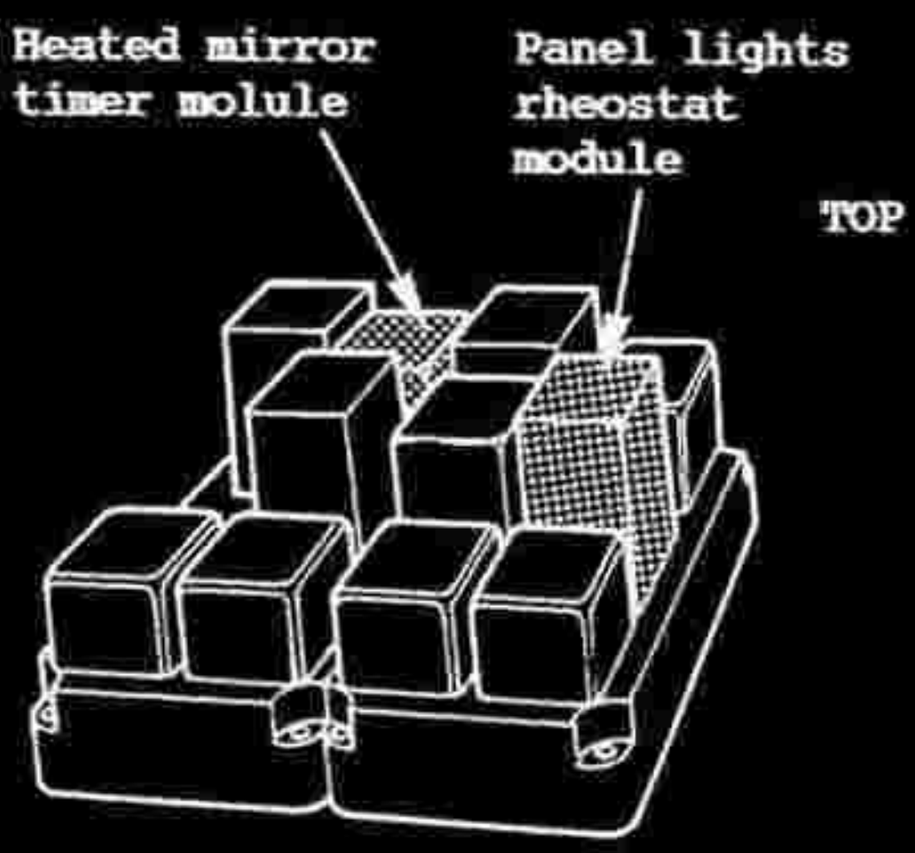
6. Refit the relay stations to the mounting bracket, and insert the relays. Refit the bracket assembly to the steering column brace.

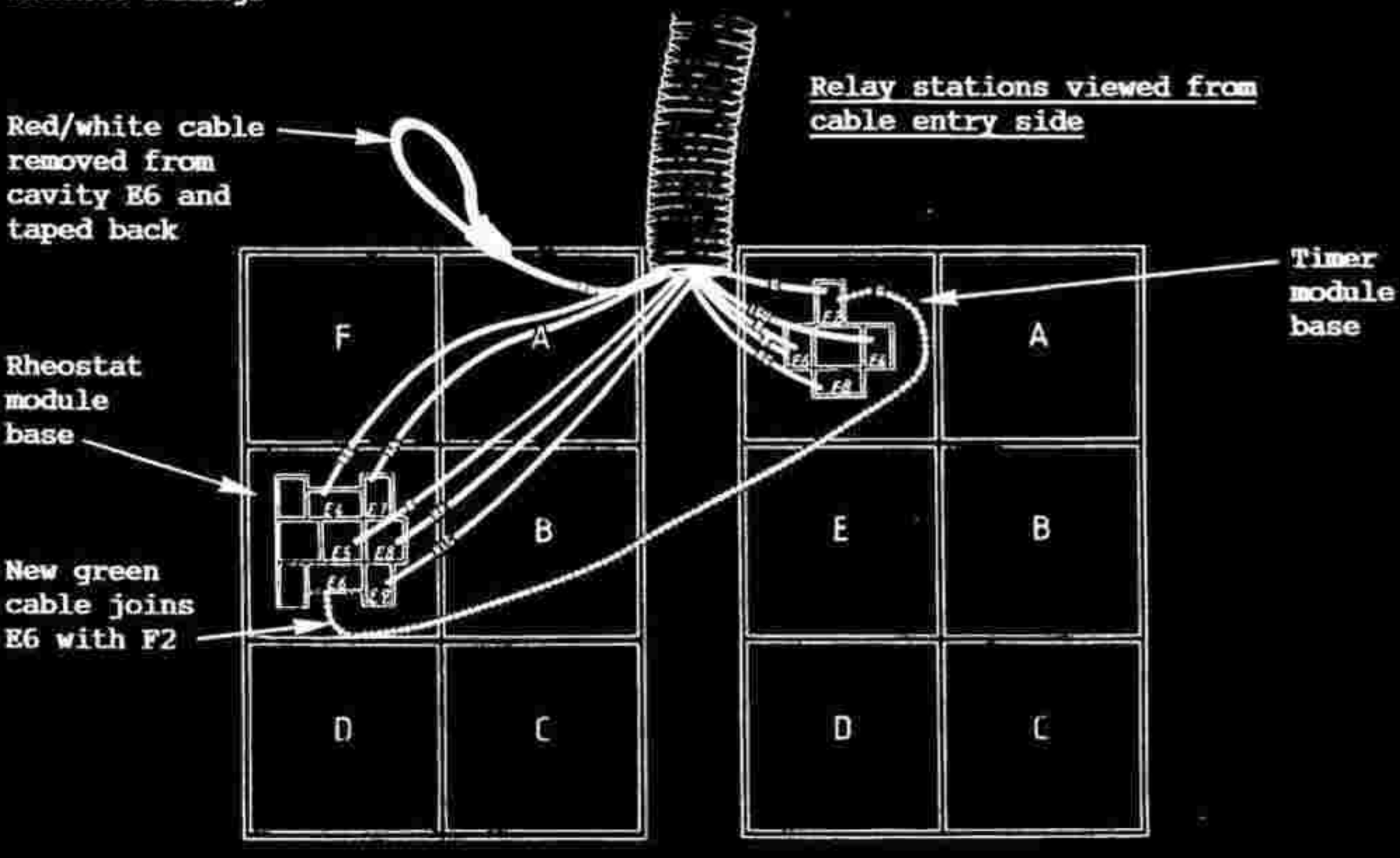
7. In the passenger footwell, replace the existing 3A fuse in slot 19 of fusebox A (heated mirror timer), with the new 7.5A fuse.



CDL unit/relay station bracket fixings



Relay stations viewed from beneath



SERVICE BULLETIN

Date 16.12.91

Model Elan & Elan S.E.

Number 1991/26

CLASS 2

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Elimination of steering rack mounting shim washers used on some Elans.

REASON: Special shim washers were used on some cars, as a temporary measure, to correct misaligned steering unit mounting bosses on the chassis.
A longer intermediate shaft is now available for these cars, which should be fitted in place of the shim washers in order to achieve optimum rack positioning and steering characteristics.

ACTION: At the next opportunity, on all '91 M.Y. cars in the following VIN range:

M 6430 to M 7050 (Oct '90 to Jan '91)

- inspect the two steering rack to chassis mounting points for the presence of tapered shim washers fitted between the rack housing and chassis. The normal build configuration is for a washer to be used beneath the head of each of the two mounting bolts, but for there to be **NO** washers between the rack housing and chassis. On any cars found to have beem built with washers between rack housing and chassis, carry out the following procedure:

Parts Required

Intermediate Shaft	A100H0058F	1 off
Bolt, M12x90, steering rack mounting	B100H6015F	1 off
Bolt, M12x110, steering rack mounting	B100H6016F	1 off

1. Release the upper steering column assembly fixings, and remove the pinch bolt securing the upper u/j to the intermediate shaft. Withdraw the upper column from the intermediate shaft.
See Service Notes sub-section HC.3.

2. Remove the lower u/j shroud from the bulkhead, and remove the pinch bolt securing the lower u/j to the intermediate shaft. Withdraw the intermediate shaft.

3. Release the two steering rack mounting bolts and washers. Discard the bolts and the tapered shim washers between the rack and the chassis.

4. Refit the rack assembly using **new bolts** with the existing washers beneath the heads. Do not fit any washers between the rack and the chassis. Tighten to 120 Nm (89 lbf.ft).

Continued.....

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5. Fit the new longer intermediate shaft A100H0058F and upper column assembly, paying careful attention to the orientation of the u/js as detailed in Service Notes sub-section HC.3.

CHARGES: 1.3 hr/car. Warranty claims marked S/B 1991/26 Class 2 should be submitted.

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SERVICE BULLETIN

Date 12.06.92

Model All

CLASS 3

Number 1992/02

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Prohibition of 'Chip Tuning'.

REASON: Increasing availability of modified engine management 'chips' by specialist firms.
The engine management ECM (electronic control module) comprises:
- a controller which includes the body of the unit and the main control circuits;
- a 'Mem-Cal' memory and calibration unit, sometimes referred to as the 'chip', which contains data specific to a particular model, including turbo boost strategy, ignition timing etc.

Dealers will be aware of the proliferation of specialist 'tuning' firms offering modified chips, often increasing maximum boost pressures. The ECMs on all Lotus models are non-serviceable sealed units and have the Mem-Cal access cover sealed by two anti-tamper labels.

ACTION: If an enquiry is received regarding the availability or suitability of such non standard electronic equipment, dealers should make every effort to dissuade the Lotus owner from such fitment. Invalidation of engine warranty is consequent upon the use of such non Lotus approved equipment, as it is for the cutting, removal of, or damage to the ECM anti-tamper labels.

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SERVICE BULLETIN

Date 12.06.92

Model Elan & Elan S.E.

Number 1992/03

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Introduction of revised sun visor mounting spigots.

REASON: To provide a more positive pivoting action.
The diameter of the sun visor mounting spigots has been increased in order to provide a closer fit with the pivot bushes, for a stiffer pivoting action and improved durability.

ACTION: The revised mounting spigots have been fitted to all Elan models from VIN **N 6446** (April '92)
The new part is a direct replacement of for the old, and may be fitted as follows:

Parts Required	Part Number	Qty per car
Mounting Spigot, sun visor	B100V0290H	4

For each of the sun visors:
- From the windscreen header rail, prise off the plastic finisher covering the visor mounting screws.
- Remove the single cross head screw securing each of the two mounting spigots, and remove the visor.
- Pull out the spigots from the visor and insert the new items.
- Refit the visor and the plastic finisher.

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SERVICE BULLETIN

Date 12.06.92

Model Elan &
Elan S.E.

Number 1992/04

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

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TITLE: Chassis anti-corrosion guarantee retreatment.

REASON: To advise dealers of the recommended times and costs for the chassis anti-corrosion retreatment, to be carried out 2, 4 and 6 years from the date of vehicle registration.

ACTION: In order for the owner of an Elan to maintain the 8 year anti-corrosion guarantee, it is a requirement that the chassis is retreated in accordance with Dinol specified procedures within 45 days either side of the 2nd, 4th, and 6th anniversaries of the date of original registration. Although it is the vehicle owner's responsibility to make arrangements for the work to be done, it is in the dealer's own best interests to ensure that owners are reminded of this requirement.

Recommended Charges

Labour time for retreatment	1 hr
Materials	£ 15
Dinol validation stamp	£ 6

Also note that the chassis external coating must be inspected in accordance with the Lotus Elan Maintenance Schedule, and if necessary repaired as specified in Service Notes Sub-Section AD.6.

The retreatment procedure, already supplied to dealers by Dinol, is copied here for reference and will shortly be issued as part of Service Notes Section OE.

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Date:

Ref:

DINOL
Member of the EMS-TOGO Group

LOTUS PLAN

ANTI-CORROSION GUARANTEE
Servicing requirement: 24, 48 and 72 months

PROCEDURE

I REWAX PROCEDURE (using Dinol Injection Wax 3654)

1. **Top of front suspension unit.**
   Remove grommets as indicated and lightly spray-coat the area using the Hook Nozzle.

2. **Chassis Bulkhead.**
   Access via existing openings. Spraycoat internal surfaces using the Hook Nozzle and Flexible Lance.

3. **"A" Pillar.**
   Remove grommet retaining the wiring loom to gain access to internal surfaces. Spraycoat internal and external surfaces of pillar including door hinge surrounds using the Hook Nozzle.

4. **Top of rear suspension unit.**
   Pull back trim to enable access. Spraycoat entire surround using the Hook Nozzle.

5. **Front Frame - cross member.**
   Treat via existing openings using the Hook Nozzle.

6. **Underframe.**
   Access via existing openings. Take care to wax inject through each opening using the Hook Nozzle and Flexible Lance. Apply product through an angle of 360° when treating the upper and closure boxed section.

7. **Longeron and Front Frame.**
   Treat via existing openings using the Flexible Lance and Hook Nozzle.

8. **Bulkhead and Front End of Back-bone.**
   - Bulkhead to toe box panel and end plate gusset.
   - Front box leg to bulkhead.
   - Backbone gusset major to backbone.
   - Front cross-box forward panel to front box leg.
   - Tunnel reinforcement to catalyst backbone cut-out plate.

   Wax inject via existing openings using the Hook Nozzle and Flexible Lance.

9. **Front Track Control Arm.**
   Remove plug for access and treat using the Hook Nozzle.

10. **Back-bone**
    Access as indicated. Wax inject using the Flexible Lance.

11. **Seat mounting bracket to Backbone.**
    Access as indicated. Treat using the Hook Nozzle.

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DINOL (GB) LTD

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Co Reg No 2687872

Tel: 0235 770878
Fax: 0235 770883

12. **Rear leg to Back-bone.**
Access via existing openings and treat using the Flexible Lance.

13. **Outrigger: Outer Section.**
14. **Outrigger: Inner Section.**
Access to each section via removal of 10mm plugs positioned in each rear wheelarch (located in rear of sills). Wax inject using the long Rigid Lance and Hook Nozzle.
NB Remove rear wheels: refit to correct torque.

15. **Jacking Points.**
Unscrew the bolt positioned in the underside of the jacking point. Treat each section using the Flexible Lance. Refit bolt and tighten to 48-50Nm (35-87 lbf. ft).

II MAINTENANCE OF EXTERNAL SURFACES OF THE STEEL STRUCTURE AND ALLIED COMPONENTS.

Inspect external surfaces for damage to the protective coating. Make good damage as necessary with an approved Lotus repair material. (Annual Requirement).

Procedure for repair of damage to the protective coating:

- Ensure that surfaces are clean and dry.
- Remove any existing corrosion using a wire brush.
- Lightly spraycoat surfaces with Dinol 3125 External Protection Wax.
- Conclude with an application of Dinol Tectacote 205 "wet on wet", i.e. apply immediately over Dinol 3125.
- Raise the temperature of Tectacote 205 prior to use.
- Apply each product to surfaces at a pressure of approximately 80 p.s.i. using the Hook Nozzle.

It is strongly recommended that the service be concluded with an application of Dinol 3125 External Protection Wax to all exposed surfaces of the Steel Structure as the ensuing protection provides for good penetration into crevices and joints and a wax coating that will not crack, chip or peel.

Dinol 3125 External Protection Wax and Tectacote 205 are approved Lotus repair materials.

III Inspect the Steel Structure for damage. Confer with vehicle owner prior to repair or replacement.

IV Indicate inspection results on appropriate Service Card by relative symbol and enter matrix co-ordinates. Check for cleanliness of painted surfaces and glass. Complete Service Card in Guarantee Book.

M Taylor
Technical Manager
Dinol (GB) Ltd

January 1991

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SERVICE BULLETIN

Date 12.06.92

Model Elan & Elan S.E. (Not USA)

CLASS 3

Number 1992/05

Service Manager	Service Reception	Supervisor	Parts Manager

COPYRIGHT PROFIT

TITLE: Radio aerial resistance check.

REASON: To identify faulty, fixed type, radio aerials.

ACTION: If an Elan with a fixed type radio aerial (i.e. all non-USA specification cars) is found to suffer from excessive radio interference from other in car electrical equipment, it is possible that poor aerial earthing is the cause.
Unplug the radio aerial lead, and check the resistance between the earthing sheath of the aerial lead plug and the body of the aerial mast.
Specification = less than 1 ohm.
If a higher resistance is found, the aerial assembly should be replaced - part number B100M0122F.

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SERVICE BULLETIN

Date 12.06.92

Model Elan & Elan S.E.

CLASS 3

Number 1992/06

Service Manager	Service Reception	Supervisor	Parts Manager

NOT TO BE REDISTRIBUTED FOR PROFIT

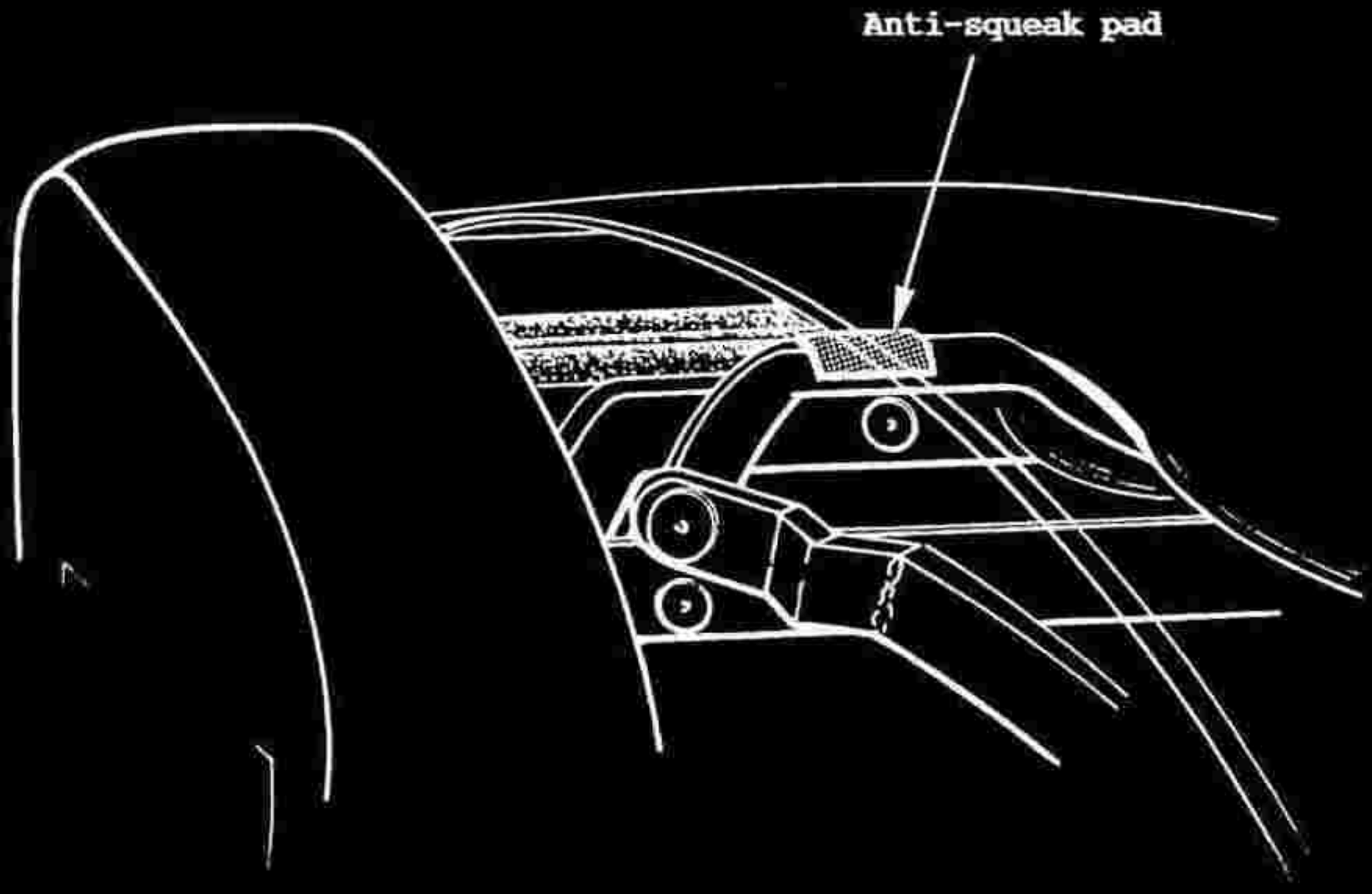
TITLE: Introduction of anti-squeak pads for roof stowage lid.

REASON: To prevent squeaking noises caused by contact between front edge of roof stowage lid and soft top support frame.

ACTION: If a squeaking noise on an Elan is found to be caused by the front lip of the roof stowage lid rubbing on the soft top support linkage, a self adhesive anti-squeak pad should be applied to each 'C' link as detailed below:

Parts Required	Part Number	Qty
Anti-Squeak Pad, roof mechanism	A100B6286S	2

- At each side of the car, thoroughly clean the top surface of the 'C' link immediately below the front edge of the roof stowage lid, and mark the point of contact.
- Peel off the backing strip and stick a pad onto the roof link centrally about each contact point.



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SERVICE BULLETIN

Date 07.12.92

Number 1992/07

Model Elan & Elan S.E.

Service Manager	Service Reception	Supervisor	Parts Manager

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TITLE: Check of oil hose elbow pipe clearance.

REASON: To ensure adequate clearance is maintained after disturbance of an oil hose connector union.
Feed and return connections for the oil cooler are provided at the right hand rear of the engine, adjacent to the RH front suspension turret. The two oil cooler hoses which connect to these unions use short elbow pipes at the engine end to permit their routing between the topshell and longeron. Care must be taken when tightening these joints to achieve the correct elbow pipe orientation and provide sufficient clearance between the elbow pipes and the adjacent brake pipe, allowing for the full range of engine movement on its rubber mountings.

ACTION: With immediate effect, carry out the following check on all Elan models ('90 to '92 model years).

DEALERS ARE REQUESTED TO CONTACT THE OWNERS CONCERNED IMMEDIATELY AND ARRANGE AN EARLY APPOINTMENT. CHECK ALL CARS IN DEALER STOCK.

1. Remove the RHF wheelarch liner.

2. Carefully examine the elbow unions and brake pipe for signs of chafing or damage, using a mirror if necessary, and renew components if necessary.

3. Check for oil hose elbow pipe clearance as shown in the illustration. There should be a minimum gap of 10mm between both the elbows and:
   - the brake pipe;
   - the chassis longeron;
   - the body topshell.

   If necessary, slacken the elbow pipe union nut and reposition the elbow, and/or bend the brake pipe to achieve the specified condition. Torque tighten the union nuts to 27 Nm (20 lbf.ft).

4. Refit the wheelarch liner.

CHARGES: 0.3 hr/car. Warranty claims marked S/B 1992/07 Class 2 Immediate should be submitted.

Illustration overleaf.....

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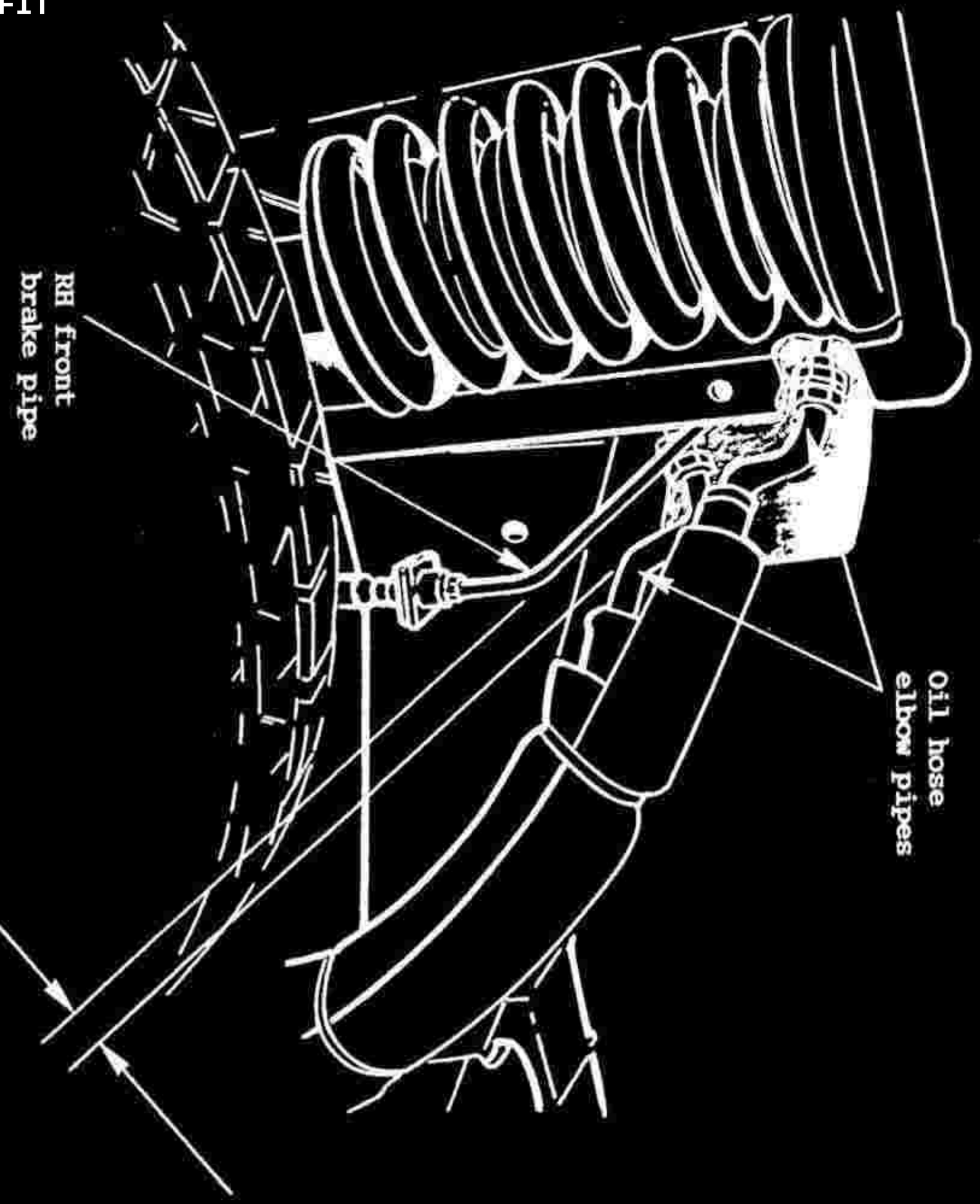

SERVICE BULLETIN

CLASS 2

Number
1992/08

Service Manager | Parts Manager

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TITLE: Fitment of chassis load spreading plate to rear engine mounting point.

REASON: To feed engine torque loads into the chassis over a wide base and optimise the dissipation of stress exacerbated by certain driving styles or conditions which result in exaggerated powertrain 'shunt'.

ACTION: At the next opportunity on all Elans prior to:
VIN **N 6332** (December 1991)
- carry out the following modification. Cars after this change point have chassis modified internally and do not require the spreader plate.

Parts Required	Part Number	Qty
Spreader Plate Kit comprising:	A100A0965S	1
Spreader Plate, rear engine mounting	A100A0951S	1
Setscrew, M8x80, caphead	A100W7092F	2
Setscrew, M8x25, caphead	A075W7024F	4
Spring Washer	A075W4036Z	4

Note that fixings are provided for both the early and late type of rear steady arms (see Service Notes sub-section EC.15). On early cars with the rear engine mounting housed in the steady arm, use two M8x80 and two M8x25 screws. On later cars with the mounting housed in an aluminium trunnion, use four M8x25 screws.

1. Catalyst cars: Remove the exhaust downpipe by separating from the starter catalyst housing and main catalytic converter. Remove the main converter after releasing the slip joint and withdrawing from the underframe. Remove the catalyst heat shield from the chassis.
   Non-catalyst cars: Disconnect the exhaust at the downpipe to front section joint, and secure exhaust aside.

2. Remove and discard the four fixings securing the rear engine mounting to the chassis.

3. Using Dinol Tectacote 205 thixotropic wax coating, warmed up if necessary to facilitate application by brush, treat both sides of the spreader plate, and the corresponding area on the underside of the chassis. Also treat the inside surface of the chassis over the whole of this area using Dinol Injection Wax 3654.

Continued.....

4. Whilst the wax coating is still wet, fit the plate to the chassis, and retain with the new cap head fixings and spring washers. Torque tighten to 23 Nm (17 lbf.ft).

5. Refit the heat shield on catalyst equipped cars, and the exhaust system as necessary (refer to Service Notes section SD).

CHARGES: Catalyst cars: 0.7 hr/car.
Non-cat cars: 0.4 hr/car.
Warranty claims marked S/B 1992/08 Class 2 should be submitted.

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SERVICE BULLETIN

Date 11.01.93

Model Elan & Elan S.E. (U.K. only)

CLASS 2

Number 1993/01

Service Manager	Service Reception	Supervisor	Parts Manager

NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Replacement of alarm microwave sensor.

REASON: Due to recent clarification of international legislation on permitted microwave frequencies and power outputs, the Gemini '1059' microwave sensor supplied with Lotus Elan Vehicle Alarm System kits, is to be replaced by a revised version which uses a different frequency and also incorporates improved sensitivity adjustment control.

ACTION: When any Elan, which has been fitted with the Lotus Vehicle Alarm prior to March 1992, is next scheduled for work, Dealers should telephone a Gemini hot line by dialling **0905 756624**, and then after the tone, dialling **223**. Quote the vehicle registration number and VIN, and arrange for a Gemini engineer to be in attendance at that time to replace the microwave sensor. As much notice as possible should be given to enable the movement of engineers to be planned.

In certain circumstances, Gemini may authorise the dealer to carry out the replacement, in which case:

i) Gemini will issue an authority number;
ii) Gemini will despatch a sensor on 24 hr delivery;
iii) Gemini will telefax a claim form (a specimen of which is attached);
iv) Payment for authorised claims (0.5 hr at the normal dealer labour rate) will be made direct from Gemini on receipt of the completed claim form together with the old sensor.

Note: On no account is any work to be performed without authority from Gemini. No payment will be made without an authority number.

Tools Required
Medium and small crosshead screwdrivers
8mm drill
Scroll crimp pliers

Parts Required
Microwave sensor* c/w terminals & connector block - supplied by Gemini
Double sided tape
Insulation tape

* Note that the new type sensor can be identified by a sticker: 'MPT 1349 WT LICENCE EXEMPT'.
Any alarm kits with old type sensors held in dealer stock should be returned to Lotus Parts Dept. for exchange.

Continued.....

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1. Remove the mat from the parking brake lever recess, and by referring to the attached template, check whether the modification has already been carried out, as indicated by the presence of the additional (offset) hole for the microwave sensor LED. If the sensor is found to be fitted in the new offset position, take no further action.

2. Remove the centre tunnel console: Remove filler panel behind console; release fixings beneath the console oddments tray; pull out the window switches and release the fixings via the apertures; pull off parking brake lever grip; lift the console over the parking brake lever and disconnect the alarm LED connector.

3. Remove the battery compartment access panel and disconnect the 3-way connector block between the microwave sensor and the alarm control module. Release the sensor lead and remove the microwave sensor from the tunnel top.

4. The new microwave sensor is to be fitted offset towards the left hand side for optimum coverage of the interior. Use the attached template to drill the additional 8mm hole in the console parking brake lever recess.

5. Lay the new sensor on the tunnel top, and feed the lead through the rear diaphragm. Route the lead along the left hand side of the tunnel and space tape to the main harness leaving a short loop at the sensor end.

6. Clean the tunnel top insulation where the sensor is to be fitted. Apply a small piece of double sided tape to the top of the microwave sensor, and several strips to the sensor underside. Fit the tunnel console over the parking brake lever, and stick the sensor to the underside of the console so that the (new position) adjuster access holes are aligned. Connect the alarm LED and refit the console, pressing down over the parking brake recess to stick the microwave sensor to the tunnel top.

7. In the battery compartment, terminate the microwave sensor lead with the terminals supplied, and insert into the 3-way connector block using the old sensor lead as pattern (colours match with the alarm module). Mate connector with the alarm control module, and refit the battery access cover.

8. Adjust the sensitivity (range) of the new sensor during the 40 second delay period after arming as follows:
Remove the tunnel tray mat, observe the pilot light, and arm the system. After a 10 second stabilisation period, wave an arm at a progressively decreasing distance from the microwave sensor, until the pilot light flashes and indicates that the movement has been detected (alarm triggered). Turn the alarm off and on again to restart the arming delay period, and check the point of detection when approaching from several different directions. Test with the roof both raised and stowed, and adjust if necessary by turning the sensor screw clockwise to increase sensitivity (range) or counterclockwise to decrease sensitivity.

Continued.....

A balance must be struck between optimum protection, and the avoidance of 'false alarm' triggering from non-threatening movement outside the vehicle.

9. Refit the tunnel tray mat.

CHARGES: 0.5 hr/car. Gemini authorised claims should be submitted using the telefaxed claim form, and sent **with the displaced sensor** directly to Gemini Elettronica Ltd., Wainwright Road, Shire Business Park, Worcester, WR4 9FA.

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TUNNEL TRAY TEMPLATE

NOT TO BE REDISTRIBUTED FOR PROFIT

GEMINI
ELETTRONICA
GEMINI ELETTRONICA LIMITED
WAINWRIGHT ROAD, SHIRE BUSINESS PARK, WORCESTER, WR4 9FA.
TEL: 0905 756 900. FAX: 0905 756 615.

REPLACEMENT OF '1059' MICROWAVE SENSOR IN LOTUS ELAN VEHICLE ALARM SYSTEM

Enquiry Date: ..... Lotus Dealer: .....

Reg. No.: ..... VIN: .....

PART A - GEMINI ENGINEER VISIT

Agreed Date of Gemini Visit: ..... Time: .....

PART B - AUTHORISATION FOR LOTUS DEALER TO CARRY OUT WORK

Authorisation No.: .....

Labour Cost Claim: Dealer Hourly Rate £..... x 0.5 hr = ...

Service Manager Signature: .....

Dealer Stamp:

Return complete form with displaced microwave sensor to:

Gemini Elettronica Ltd., Wainwright Road, Shire Business Park,
Worcester WR4 9FA

VEHICLE SECURITY SYSTEMS • SPAL UNIVERSAL ELECTRIC WINDOWS • ZENDAR CAR AERIALS • CENTRAL LOCKING SYSTEMS
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Optional Modification to Include Vehicle Immobilisation

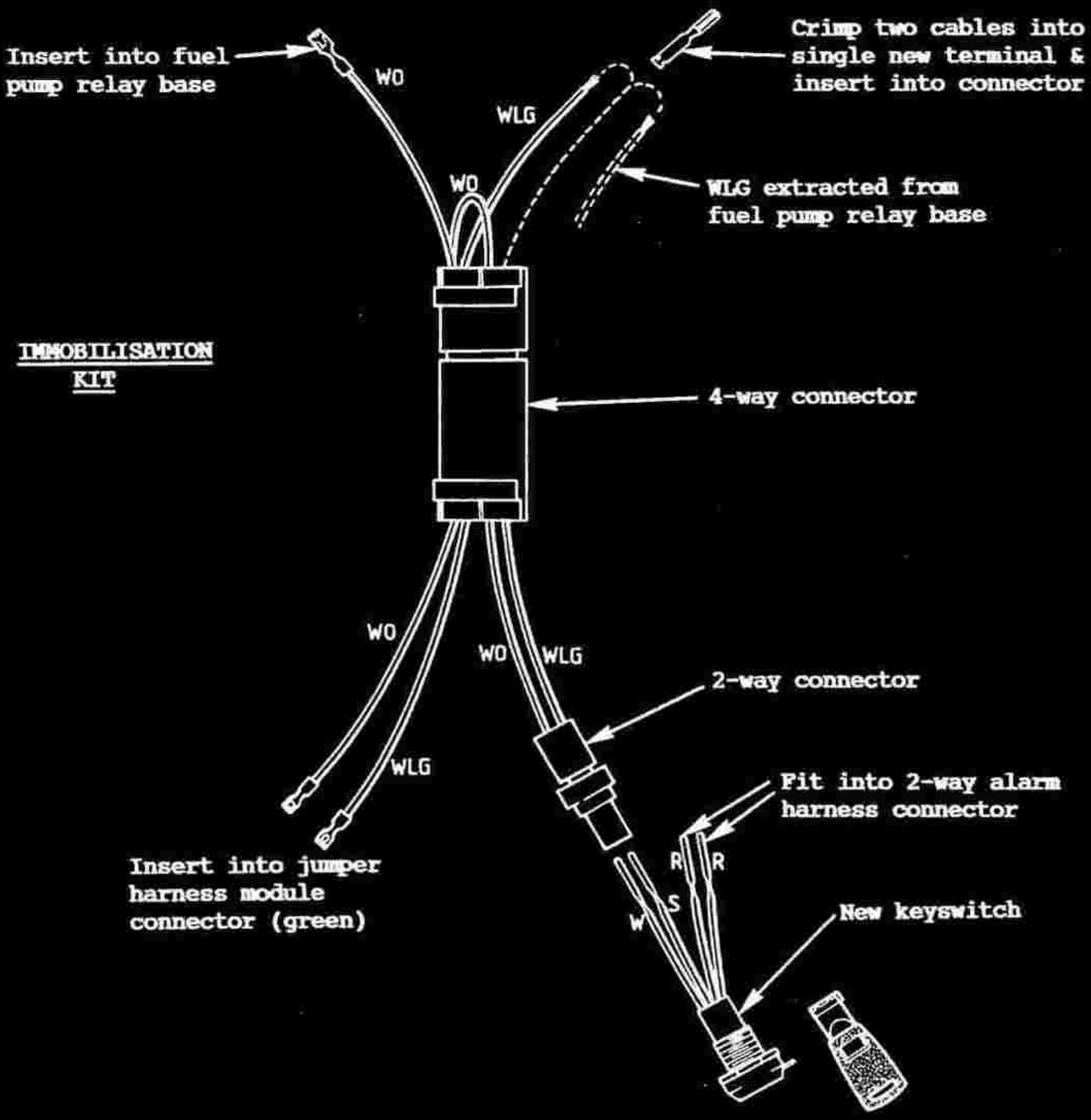
In order to maintain the highest level of powertrain integrity, the standard Lotus vehicle alarm does not include an immobilisation feature other than activation of the alarm in the event of the ignition being switched on or 'hot wired'. If it is required that vehicle immobilisation be included with the alarm, the following modification may be carried out at extra charge to the customer:

Parts Required

Immobilisation Kit, vehicle alarm,	RHD	A100M0336S
" " " "	LHD	A100M0337S

a) Remove the roof stowage compartment floor and the speaker trim panel behind the RH seat.

b) Remove the fuel pump relay, (RHD - back of diaphragm panel; LHD - behind speaker trim panel) and remove the white/light green cable from the relay base using a jeweller's screwdriver or similar.



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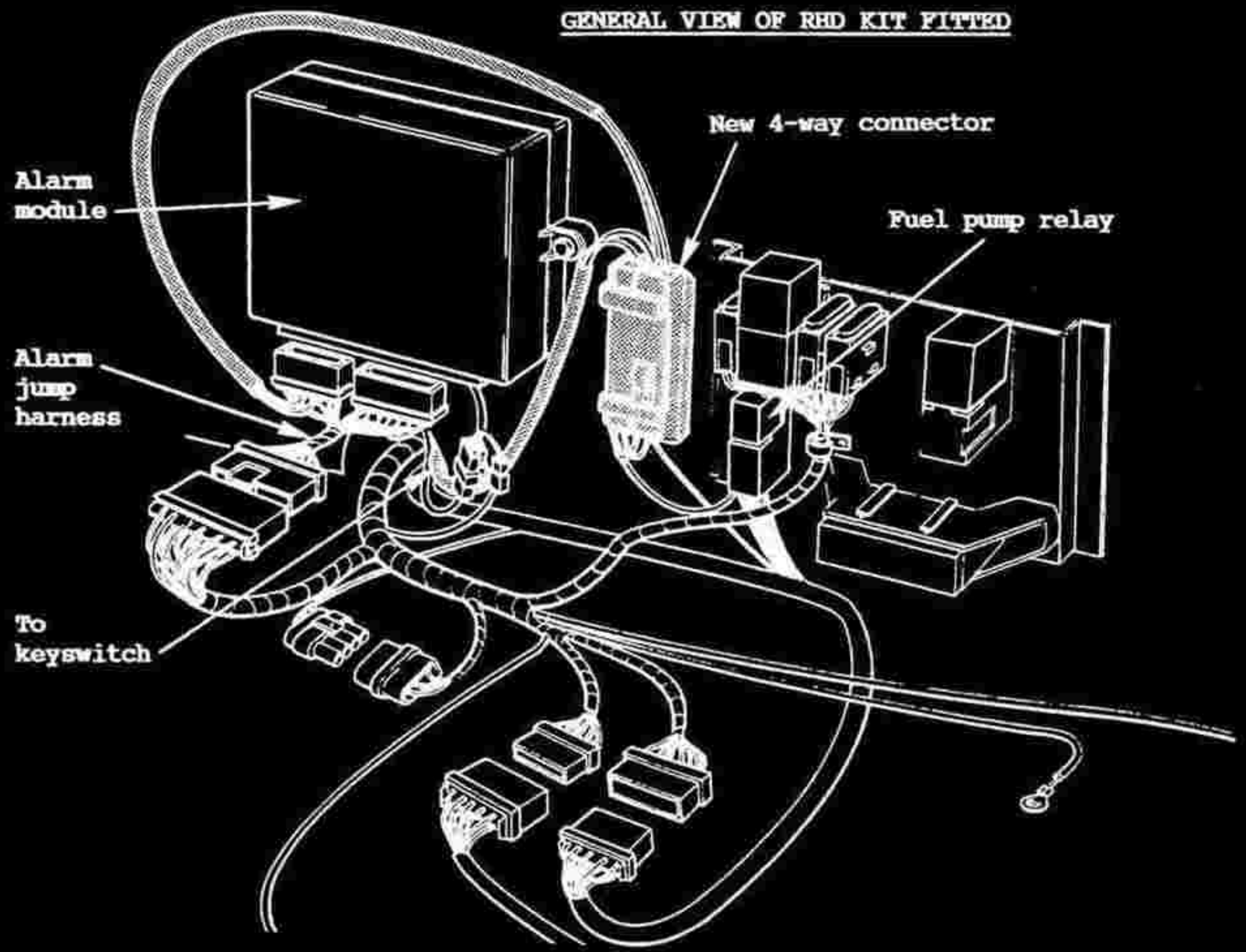
GENERAL VIEW OF RHD KIT FITTED



c) Cut off the terminal from this cable and join with the free end of the white/light green cable (loop) in the **female** 4-way connector housing on the immobilisation harness, using the single female spade terminal supplied in the kit.
Insert into the 4-way **female** housing in the position shown.

d) Fit the terminated white/orange cable from the **female** 4-way housing into the fuel pump relay base cavity from which the white/light green was removed, and refit the relay.

e) Remove the jumper harness between the alarm harness and control module. Taking the **male** 4-way connector housing in the immobiliser kit, insert the white/orange and the white/light green terminated cables into the vacant cavities of the smaller green connector on the module jumper harness. Refit the jump harness.

f) Route the slate and the white cables with the 2-way connector through to the alarm master key switch. Remove the two red cables of the existing keyswitch from their 2-way connector, and discard the switch. Terminate the 4 cables on the new keyswitch with the male terminals supplied, fit the new keyswitch into the panel and insert the two red wires into the 2-way connector from which the old switch red cables had been removed. Insert the remaining white and slate cables (either way round) into the new 2-way connector and mate with the immobilisation harness.

g) Test all alarm functions and refit trim panels.

Suggested Labour Time for Immobilisation Modification
If included with alarm system installation, add 0.3 hr.
If added at a later date, add 0.8 hr.

SERVICE BULLETIN

Date 23.06.93

Model Elan & Elan S.E.

CLASS 3

Number 1993/14

Service Manager	Service Reception	Supervisor	Parts Manager

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TITLE: Service supply of parking brake lever and mounting bracket.

REASON: The last batch of Elans built in 1992 were fitted with a longer parking brake lever and corresponding mounting bracket with repositioned pivot. The ratchet of the new lever assembly was modified by the removal of the first portion of teeth, in order to allow for cable slack to be fully taken up before the ratchet operates. The modifications were designed to make better use of operator effort and deter against improper use of the parking brake, which should always be applied firmly and fully to the maximum attainable number of 'clicks'.

ACTION: The revised mechanism was fitted to all cars from the following change point:

VIN **N 6780** (May '92)

In order to rationalise service parts stocks, supplies of the early type lever and mounting bracket will be run out, after which time the following parts set will be required as a package when replacing either of these parts on an earlier car.

Description	Part Number	Qty
Parking Brake Lever Kit	A100T0188J	1
includes:		
Parking Brake Lever	B100J0179F	1
Mounting Bracket, park brake lever	A100J0187F	1
Bolt, M6x50, ratchet fixing	A075W2032Z	1
Gaiter, parking brake lever	A100V0637J	1
Clevis Assembly, lever to compensator	D100J0021F	1

For further details, refer to Sub-Section JE.4 of the Elan Service Notes manual. Note that the parking brake microswitch operating lever requires bending to suit the new installation.

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SERVICE BULLETIN

Date 20.05.94

Model Elan & Elan S.E.

CLASS 3

Number 1994/03

Service Manager	Service Reception	Supervisor	Parts Manager

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TITLE: Adjustment of Elan rear wheel bearings.

REASON: Revised service procedure to facilitate more accurate wheel bearing adjustment and reduce the possibility of over tightening. By specifying free movement at the wheel rim, the endfloat of the wheel bearings is more easily and reliably measured. Insufficient endfloat may not allow sufficient room for expansion and result in overheated bearings.

ACTION: The Elan Service Schedule (LSL 271C) calls for a check of rear wheel bearing adjustment at 12,000 mile intervals. Perform this check as follows:

1. Raise the car on a wheel free lift and attach a dial gauge to the hub carrier or lower wishbone, with the probe against the wheel rim on a horizontal transverse axis. Rock the wheel in and out at that point and measure the amount of total free play recorded on the dial. Use only sufficient force to display the free play - excessive vigour will flex components, and if the gauge is wishbone mounted, flexure of the wishbone to hub carrier rubber bushes will result in falsely high figures being recorded.
Specification: 0.40 - 0.60 mm (0.015 - 0.025 in)
With increasing familiarity, this degree of clearance may be assessed without recourse to a gauge.

If adjustment is required:

2. Remove the wheel and press the finisher (inwards) from the wheel centre. Prise out the dust cap from the hub centre.

3. Remove the hub nut split pin and refit the road wheel. Tighten the hub nut to 25 Nm (18 lbf.ft) whilst rotating the wheel to settle the bearings.

4. Slacken the nut, and re-tighten using only finger torque until the specified free play is achieved.

5. Remove the wheel. Insert a new split pin to lock the hub nut, bending the short end over the nut, and the long end over the end of the axle.

6. Refit the hub dust cap, wheel embellisher and road wheel.

Ensure all service personnel are made aware of this procedure change, and update the Elan Service Notes manual sub-section DD.6 accordingly.

SERVICE BULLETIN

Date 25.07.94

Model Elan S2

CLASS 2

Number 1994/05

Service Manager	Service Reception	Supervisor	Parts Manager

NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Introduction of Elan S2.

REASON: To identify new features compared with S1 model.

INTRODUCTION

Elan S2 production commenced at VIN **R 6001** ('94 M.Y.)

SUMMARY OF CHANGES

Principal changes for the S2 are as follows:

- All models, RHD and LHD, are catalyst equipped, and use the European type body structure.
- Factory fit alarm/immobiliser to meet U.K. insurance company requirements.
- Single key operation of door locks.
- Lengthened and angled parking brake lever for improved ergonomics.
- Redesigned centre tunnel trim for improved elbow room and to accommodate revised parking brake lever. Retrimmed seats.
- Road wheels restyled (similar to Esprit S4) and increased in diameter from 15" to 16". Fitted with Michelin XGTV 205/45 R16 tyres.
- Minor revisions to steering and suspension components and settings.
- Revised gear change cables with locknut adjusters.
- Individually numbered fascia badge. Option of 'Nardi' steering wheel.
- Two additional paint colour options, and optional blue soft top.
- Increased battery capacity. Re-routed battery cable. Lights on buzzer. Optional Clarion CRX 121R audio head unit, boot mounted Clarion CDC9250 compact disc autochanger.

EXHAUST CATALYTIC CONVERTERS

All S2 Elans are fitted with a starter catalyst (contained within front downpipe) and main catalytic converter to comply with European legislation. Other related features include an oxygen sensor and revised ECM; fuel system evaporative emissions charcoal canister and controlled purge system; restricted fuel filler neck (for unleaded fuel nozzle size).

The engine management system service notes manual for catalyst equipped Elans, is **'Section EMJ' part no. C082T0327J**, which should be ordered through normal channels if not already acquired.

VEHICLE SECURITY ALARM

The Lotus tailored Gemini Aquila 5060T is designed to meet Thatcham 'Category 1' requirements, pending installation approval. The alarm system enhances theft protection of the car and contents as well as providing remote control of the central locking by a hand held transmitter key. When the alarm is triggered, a high pitched siren is sounded, and in some markets, the hazard lamps flashed for a period of thirty seconds, before the alarm switches off and automatically resets. (Note that variations may occur due to the legal requirements of individual countries.)

Continued.....

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The alarm system monitors the following parameters and may be triggered by:

- opening either door;
- opening the boot;
- movement detected within the passenger compartment;
- energising the ignition or starter circuits;
- removing the audio set;
- tampering with or disconnecting the alarm circuits or siren;
- disconnecting the vehicle battery.

Additional features of the the alarm system include: 'passive immobilisation' (see later); the option of switching off the ultrasonic movement detection; an LED tell tale for intruder deterrence and to signal alarm status and triggering source; a personal protection facility; and a long term power saving feature.

Alarm Keys

In addition to the two manual door/ignition keys supplied with the vehicle (which now also operate the boot lid and glovebox), the following alarm system keys are also provided:

One alarm/ignition key;

One alarm transmitter;

Two siren keys;

Supplied with the alarm keys is a plastic card which identifies the Personal Security Code for the transmitter frequency. The key number stamped on the shank of the siren keys should be noted on the card, and the card kept by the owner safely offboard with the vehicle documents together with the spare siren key for use in an emergency.

Replacement transmitter keys may be ordered through the parts department in the usual way quoting the Personal Security Code and if applicable, the manual key number.

Arming the Alarm

To arm the alarm system, close the boot lid and both doors (the soft top roof may be either raised or stowed), and press the single button on the alarm/ignition key, or the **grey** button on the transmitter key. This will switch on the alarm, immobilise the engine and operate the central door locking to lock both doors. Activation is acknowledged by a single flash of the hazard lamps.

If it is desired to arm the alarm without intrusion sensing (ultrasonics), for example if leaving an animal in the car, use the transmitter key and press the **red** button twice within any 3 second period. This command will switch on the alarm (less intrusion sensing), immobilise the engine, operate the central door locking, and be acknowledged by two flashes of the hazard lamps.

Further indication of alarm activation is provided by an LED tell tale in the tunnel trim behind the parking brake lever. This tell tale will flash once per second after the alarm is armed.

Continued.....

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After the arming command is made, a short delay will occur before the various sensors become operative, after which time the alarm will be triggered by the opening of a door or bootlid, movement detected within the passenger compartment, energising of the ignition or starter circuits, removal of the audio set, tampering with the alarm circuits, or disconnection of the battery.

When triggered, the alarm siren will sound for 30 seconds, accompanied in some markets, by the flashing of the hazard lamps. After 30 seconds, the alarm will switch off and automatically reset. If the triggering signal is still present (e.g. a door is left open), the alarm will again sound after a 15 second pause, and this cycle will be repeated a number of times as indicated in the following table. After the specified number of cycles, the particular sensor is then isolated, but the alarm remains armed and will be triggered by any of the remaining sensors. This feature complies with European legislation on noise pollution.

Triggering sensor	Arming delay	No. of alarm cycles
Door switches	40 secs.	3
Boot switch	40 secs.	3
Ignition circuit	5 secs.	unlimited
Starter circuit	18 secs.	unlimited
Intrusion (ultrasonic)	40 secs.	6
Audio set	5 secs.	5
Battery disconnection	5 secs.	unlimited

Disarming the Alarm

To switch off the alarm and operate the central door locking to unlock both doors; press again the button on the alarm/ignition key, or the grey button on the transmitter key. Disarming is normally acknowledged by three flashes of the hazard lamps. In addition, the interior lamp will illuminate for 6 seconds and the tell tale on the centre tunnel will change from a one second pulse to a continuous light for 18 seconds followed by very rapid pulsing.

If, however, the alarm had been triggered during the last armed period, the disarming signal will be acknowledged by five flashes of the hazard lamps, whilst the LED tell tale will light continuously for 18 seconds followed by a flash code to indicate which of the sensors had caused the triggering:

LED Flashes			Triggering Sensor
* * * * * *	pause	* * * * * *	Audio set
* * * * *	pause	* * * * *	Ignition circuit
* * * *	pause	* * * *	Door switch
* * *	pause	* * *	Boot switch
*	pause	*	Intrusion sensors

Note that the LED tell tale is normally lit at all times, indicating either alarm disarmed status by a very rapid pulsing, or an alarm armed status by a one second pulsing. However, a power saving feature of the system results in the LED being switched off 48 hours after the last arm or disarm command.

Passive Immobilisation

This feature is designed to ensure optimum vehicle security without requiring positive action by the driver, and is a requirement of the U.K. motor insurance industry. The alarm system allows only a certain period of time for the engine to be started after:

Continued.....

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i) disarming the alarm, or;
ii) switching off the ignition.

- and if the ignition is not switched on within 18 seconds, the engine cranking and ignition circuits are disabled automatically (passive immobilisation). The engine cannot then be started until, **with the ignition switched off**, the alarm has been switched on and then off again. The button in the alarm/ignition key may be used for this purpose, with a brief pause before the second press. The driver should be aware of this feature when driving in heavy traffic or queues, where the engine may be switched off for short periods - after stopping the engine, the ignition should be switched on again in order to keep the starter circuit active.

SALES PERSONNEL PLEASE NOTE: IT IS MOST IMPORTANT THAT THE CUSTOMER IS MADE AWARE OF THIS FEATURE AT THE TIME OF VEHICLE HANDOVER.

Personal Protection

When the alarm is armed, the siren can be activated by pressing the red button on the transmitter key. This feature may be used to ward off unwelcome attention to car or person. Pressing the red button a second time will switch off the siren. Operation of the siren in this way does not affect the status of the theft alarm which will remain armed.

Siren Deactivation

The siren is located behind the trim panel at the right hand side of the roof stowage area, and can, if necessary, be switched off using the siren key: Lift the carpet at the right hand end of the roof stowage compartment, and insert the siren key into the keyswitch accessible via a hole in the trim panel. Turn counterclockwise to deactivate.

The self powered siren uses its own battery which is recharged by the vehicle alternator.

Transmitter Battery

The operating range of the transmitter keys will vary from over 25 metres to a lesser distance depending on the state of the transmitter batteries. When replacement of the batteries in the alarm/ignition or transmitter key is due (within final 50 operations of expected life), the alarm siren will emit a short audible tone during transmitter operation. In addition, the LED on the transmitter key will light for only one second.

To replace the batteries in the alarm/ignition key, remove the two screws, and prise apart the two halves of the key head. Fit a pair of replacement batteries into the clip, with the negative side towards the printed circuit board, and reassemble the key.
Battery specification: Lithium 3V, Toshiba CR 1616; Lotus part no. A100M6221F.

To replace the batteries in the alarm transmitter: remove the single screw and separate the two halves of the transmitter body. Fit a pair of replacement batteries into the clip, with the negative side towards the printed circuit board, and reassemble the body.
Battery specification: Lithium 3V, Toshiba CR 2016; Lotus part no. A100M6219F.

Adjustment of the Ultrasonics

If necessary, the sensitivity of the intrusion sensing feature can be adjusted; oversensitivity may result in false triggering of the alarm by passers-by, or wind gusts. An adjuster screw is fitted on the alarm controller and may be accessed as follows:

Continued.....

RHD cars: The controller is mounted on the back of the relay station mounting bracket above the driver's footwell, with the adjuster screw on the upper surface. Access is available after removing the instrument binnacle cover, and using a long shafted screwdriver just outboard of the steering column support bracket.

LHD cars: The controller is mounted on the passenger door hinge post, behind the fascia, with the adjuster screw on the lower surface. Access is available from the passenger footwell.

Adjustment Procedure: Turn off the siren (using the siren key), and use the hazard lamps as an indication of alarm triggering.

i) Erect the hood and lower one window half way. Arm the alarm and wait at least 40 seconds for the arming delay period to expire. Slowly reach through the window towards the gear lever. If the lever can be touched without triggering the alarm, increase the sensitivity by turning the adjuster screw clockwise. Reset the alarm and repeat.

ii) Close both windows and reset the alarm. After the 40 second delay period, gently tap the hood and windows. If the alarm is triggered, decrease the sensitivity by turning the adjuster screw counter-clockwise.
After adjustment, turn back on the siren.

Audio Set Alarm Sensing

The alarm controller uses an earth lead to sense the presence of an audio set, with the lead connected to the body of the set. If an audio set is to be fitted to a car factory built without one, the following action must be taken to ensure that the set is protected by the alarm.

RHD cars: The radio alarm link is already fitted and earthed to the scuttle beam at the right hand end of the row of mini-relays, accessible beneath the binnacle cover. Release the lead and attach to the case of the audio set.

LHD cars: Obtain radio alarm link A082M4989F and plug into the brown/black lead from the I.C.E. harness. Attach the lead to the case of the audio set. The alarm controller must then be reprogrammed: Drop the glovebox down for access to the controller, and unclip the small cover on the top of the controller case. Move switch no.7 to the down ('on') position, and refit the cover.

Continued.....

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Alarm Notes: - If the vehicle battery becomes discharged to the extent that the engine cannot be cranked, it is possible that the voltage drop during start attempts may be registered by the alarm system as a battery disconnection, and result in automatic arming and subsequent triggering of the alarm.
- In the event of the vehicle battery becoming completely drained (e.g. lights left on), it is possible that insufficient power will remain for the alarm to be switched off on command. In this case, the doors should be unlocked manually, and the self powered siren, which will be triggered when a door is opened, turned off using the siren key. As soon as auxiliary power is provided (e.g. by 'jumper leads'), the alarm may be disarmed.

Central Door Locking

Central door locking is an integral part of the transmitter operated vehicle alarm system as described above, but note that CDL does not operate if the door locks are operated manually via the keys or interior buttons. Consequently, the anti-lockout feature of the S1 model is not applicable, so care should be taken not to lock the keys inside the vehicle by button locking a door before closing.

On any Elan S2 cars **not** fitted with a vehicle alarm system, central door locking is as for the S1.

PARKING BRAKE LEVER

The parking brake mechanism has been altered to improve ergonomics and ease operator effort, but should still be applied always firmly and fully, to the maximum attainable number of 'clicks'. Modifications include the following:

- The lever mounting bracket has been moved rearwards on the tunnel top and the pivot angle changed to cant the lever towards the driver in order to ease application.
- The lever has been increased in length to improve the mechanical advantage.
- A 'fold down' mechanism similar to the Esprit is used in order to minimise cabin obstruction. i.e. after pulling up the lever to apply, the lever may be pushed down (**without** pressing the button) to reduce intrusion. To release, pull up the lever, and press the ratchet release button in the usual way.

Note that the S2 type parking brake lever mechanism may not be fitted on the S1 due to the repositioned (and drive hand offset) chassis backbone fixings. Refer to S/B 1993/14 for Elan S1 replacement park brake levers.

CENTRE TUNNEL TRIM

The centre tunnel trim has been revised to provide increased elbow room, and accommodate the new parking brake lever. The door mirror and window switches are also repositioned to the rear of the gear lever.

The panel is retained by two M5 screws beneath the front tray mat (with loose spacers beneath the panel), and a single M5 fixing beneath the rear tray.

ROAD WHEELS & TYRES

New roadwheels share the styling of the Esprit S4 wheels, and are increased in size from 6½J x 15, to 7J x 16. The rolling diameter of the tyres is maintained at the previous level by a change in aspect ratio from 50 to 45. Tyres used are Michelin XGTV Pilot SX 205/45 R16 83V. Cold tyre pressures: 2.0 bar (29 lb/in²) front and rear.

The Esprit S4 type wheel changing jack and handle are used, and are clipped into a steel bracket in the spare wheel well.

Continued.....

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STEERING & SUSPENSION

Changes to the steering and suspension include the following:

- The steering rack valving has been changed to improve feel in the straight ahead position;
- The front top wishbones have a strengthening strut joining the front and rear halves (as previously used on USA models), to improve rigidity.
- The front suspension raft rearmost bush (mounts to the underside of the chassis front crossmember) is increased in stiffness for improved handling response.
- The dampers have been recalibrated to suit the new wheels, and have a revised top mounting lower abutment washer.
- Front wheel toe-out re-specified to: 1.2 mm total (± 0.2 mm).
- Optional 'Nardi' (Esprit S4 style) steering wheel.
- The rear suspension top link has adopted the Esprit S4 type design (tubular with adjuster trunnion) as a running change from the channel section construction.
- The lower rear wishbones are galvanised.

Elan 'S1' Upgrades

Elan 'S1' customers wishing to fit the S2 type Michelin XGTV 205/45 x 16" tyres should be advised to fit the 16" wheels as used on the Elan 'S1' USA model - **Part No. B100G6018F.** The styling of these wheels is similar to the 15" S1 wheels, but is non-directional, and has a smaller proportion of open area. These wheels and (Michelin supplied) tyres are a direct replacement for the standard 15" assemblies, and maintain the original rolling diameter.

Note that although S2 wheels and tyres (with corresponding wheel bolts and centres) will fit Elan 'S1' models, the increased weight of the wheels has required respecified damper calibrations.

Elan 'S1' customers wishing to uprate the handling of their cars may fit S2 suspension components with either the original 15" or replacement 16" wheels. Dynamics upgrade kits are available as follows:

Suspension Upgrade Kit (Stage 1); **Part No. LOTSKEL001**

comprising;	- 2 off Raft Lower Rear Bush	E100C6001F
	- 1 off Upper Half Wishbone, front LH	A100C0149F
	- 1 off Upper Half Wishbone, front RH	A100C0150F
	- 2 off Upper Half Wishbone, rear	A100F0148F
	- 4 off Wishbone Bush	C100C6003F
	- 2 off Setscrew, M10x20	A075W1046Z
	- 2 off Nyloc Nut, M10	A075W3011F
	- 2 off Flat Washer, M10	A075W4071F

The Stage 1 Kit reduces raft compliance and wishbone flexure under high loading, to the benefit of steering response. Harshness on bump is marginally increased.

Suspension Upgrade Kit (Stage 2); **Part No. LOTSKEL002**

comprising;	- Kit (1) plus;	
	- 2 off damper, front	E100C6015F
	- 2 off damper, rear	E100D6011F

The Stage 2 Kit adds the stiffer S2 dampers to sharpen the handling characteristics at whilst slightly increasing the ride harshness.

FASCIA PLAQUE

A 'Limited Edition' plaque is fixed to the passenger side fascia, and is engraved with a unique serial number.

Continued.....

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COLOURS

A dark blue soft top material is available as an option, in addition to two new metallic body colour options:

Lotus Paint Code	Colour Name	Lotus Part No.	Du Pont Code
B18	Medina Green	A100B6294V	N9888
B19	Palacio Purple	A100B6295V	3E321

VEHICLE SERVICING

A mandatory 'After Sales Service' at 1,000 to 1,500 miles (1,500 to 2,500 km) has been introduced to replace the optional Free After Sales Vehicle Check, and is similar to the Esprit version. A new Service Schedule LSL 271D includes this After Sales Service, and otherwise differs only in detail from the previous issue 'C'. Note that subject to production of the Owner's Handbook voucher, the customer pays only for materials used on the After Sales Service (as for Esprit).

A copy of the new schedule is attached, with packs of 25 available under part number LSL 271D through the usual parts ordering channels.

For clarification:

Pre-Delivery Inspection - form LSL 273D
After Sales Service)
6,000 mile 'A' service) form LSL 271D
12,000 mile 'B' service)
30,000 mile additional 'C' service items)

Recommended Times: P.D.I. - 2.5 hr.
After Sales - 1.0 hr.
A Service - 1.8 hr.
B Service - 3.5 hr.
C Service - 3.8 hr addition
12 month Time Period service - 2.5 hr.

Recommended Lubricants:
Engine - Preferred: **Castrol Formula RS 10W/60**; API SH; CCMC G5
Mobil 1 5W/50; API SH; CCMC G5
- Alternatives: Above minus 20°C: SAE 10W/30; API SG/SH; CCMC G5
Below minus 20°C: SAE 5W/30; API SG/SH; CCMC G5

Transmission: Castrol TAF-X 75W/90; Lotus part no. A082F6552S
Power Steering: PAS or ATF Dexron or Dexron II
Brake System: Non-mineral type hydraulic fluid; DOT 3 or DOT 4
Coolant Additive: Castrol Antifreeze mono-ethylene glycol blend
Factory Fill Concentration: 30%

ELECTRICAL COMPONENTS

- A Tungstone Heavy Duty Type 027 battery, with an SAE rating of 550 amps, replaces the S1 type Exide 420 amp battery.
- The positive battery cable is routed alongside the chassis backbone (formerly inside the cabin) for improved suppression.
- The latest Esprit type safety inertia switch (cuts out fuel pump) is mounted on all models within the LH rear speaker enclosure, with an access cover in the top surface.

A new electrical service notes section with circuit diagrams will be issued shortly.

Continued.....

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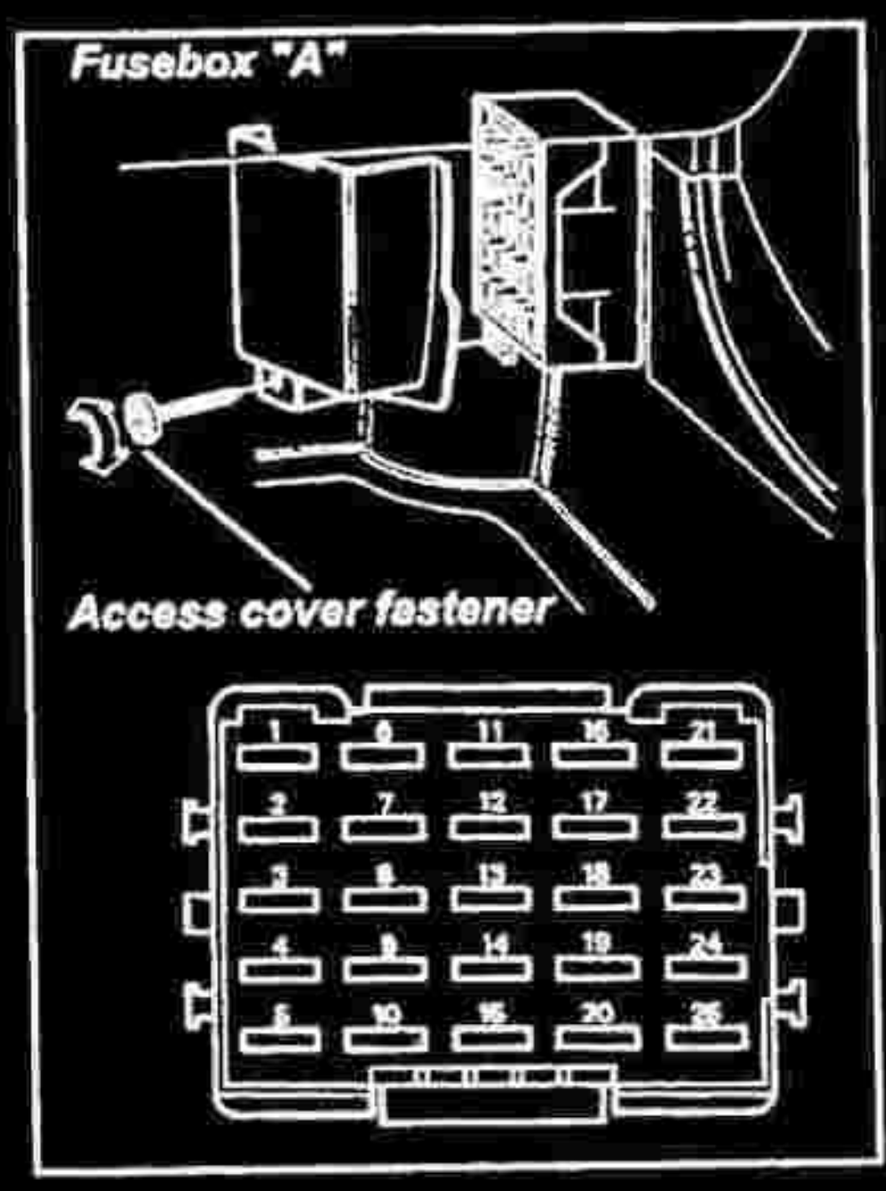
FUSES

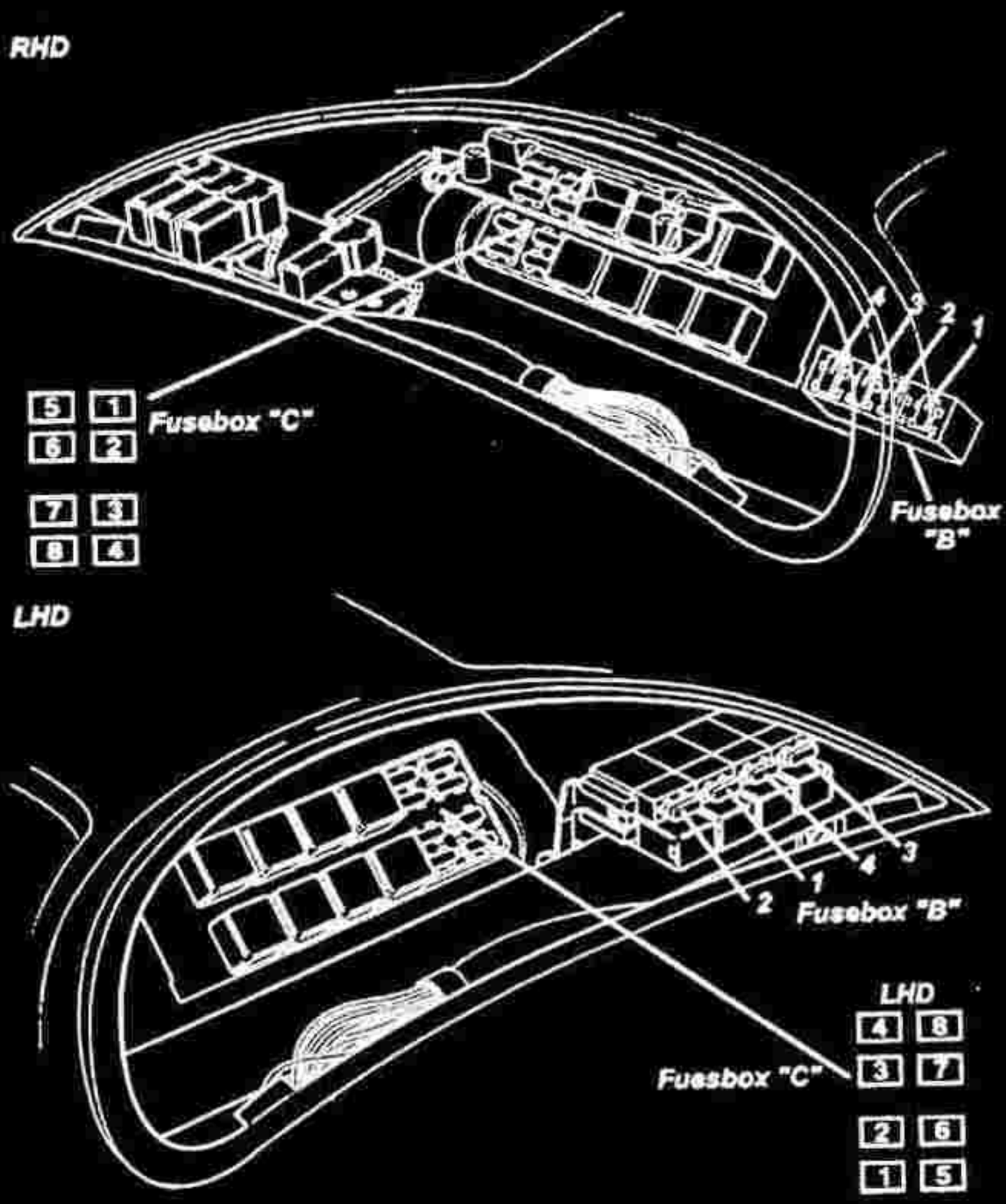
Main Fusebox (A) - ahead of passenger door hingepost

Fuse	Rating	Circuit
1	15A	Horns
2	7.5A	Air Conditioning
3	7.5A	Fuel Pump
4	10A	RHD Lighting
	7.5A	LHD CDL
5	10A	ECM
6	5A	LH Sidelamps
7	5A	RH Sidelamps
8	5A	RHD Alarm Power
9	15A	Alarm Power
10	3A	Eng. Manage. VSV
11	10A	Hazard Lamps
12	3A	Battery Services
13	5A	Stoplamps
14	5A	Int. Lamps
15	15A	Rear Fog
16	10A	DI & Reverse
17	20A	Wash/Wipe
18	7.5A	Ignition 1
19	3A	Mirror Timer
20	3A	Ign. Relay
21	5A	Mirrors
22	3A	Window Switch
23	20A	Heater Blower
24	15A	Cigar Lighter
25	5A	LHD Alarm Power



Fusebox (C) - above instrument cluster

Fuse	Rating	Circuit
1	15A	LH H/L Motor
2	15A	RH H/L Motor
3	7.5A	RHD CDL
	10A	LHD Lighting
4	5A	Coolant Pump
5	7.5A	LH Dip Beam
6	7.5A	RH Dip Beam
7	7.5A	LH Main Beam
8	7.5A	RH Main Beam



Fuse Row (B) - above instrument cluster

Fuse	Rating	Circuit
1	20A	RH Window Lift
2	20A	LH Window Lift
3	15A	RH Cooling Fan
4	15A	LH Cooling Fan

Continued

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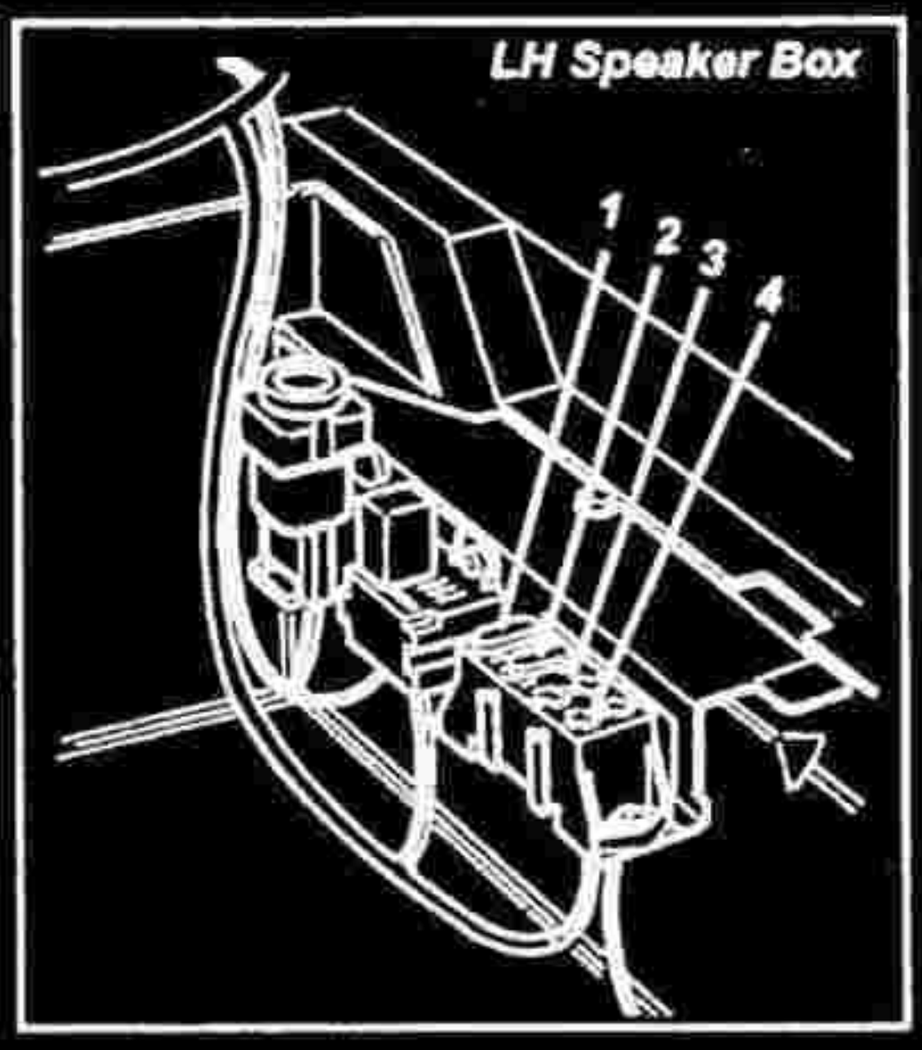
Fuses in Battery Compartment (RHD Japan & Australia + early U.K.)

Fuse	*Rating*	*Circuit*
1	5A	Radio
2	10A	Aerial
3	5A	Alarm Siren

Fuses in LH Speaker Box

Fuse	*Rating*	*Circuit*
1	5A	Radio
2	10A	Aerial
3	5A	LHD Alarm Siren
4	5A	U.K. Alarm Siren



SERVICE PARTS LIST

A service parts list supplement is attached as an interim measure prior to publication of a new Elan Service Parts List.

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SERVICE BULLETIN

Date 23.09.94

Model Elan S2

CLASS 3

Number 1994/07

Service Manager	Service Reception	Supervisor	Parts Manager

NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Elan S2 alarm system intrusion sensing.

REASON: To clarify operation of system and amend recommendations for use.

ACTION: The ultrasonic 'intrusion sensing' feature of the Elan S2 vehicle alarm system is most effective when used with the soft top and door windows raised, and is designed primarily to detect a forced break-in (e.g. window breakage). The sensitivity of the ultrasonics increases significantly with ambient temperature, and in order to minimise the potential for false triggering, the factory setting of the sensitivity should not normally be disturbed.

When leaving and locking the car, owners should be advised to raise the roof, shut the windows, and follow general security advice in locking any valuables in the boot, noting that the audio set is protected by an earth sensing lead in the alarm circuit. Refer to Service Bulletin 1994/08 for instructions concerning alarm linking when fitting or removing audio equipment.

Reliable testing of the ultrasonic system sensitivity is not easily achieved, but the alarm should be triggered (after the 40 second arming delay) by the movement of a seated occupant leaning forward. Disregard instructions on this topic in S/B 1994/05.

Attached are amendment stickers for Elan S2 Owner's Handbooks, which should be applied to page 8 and 9 of any books in dealer or customer hands at the earliest opportunity.

Lotus Cars Limited, Norwich, Norfolk, NR14 8EZ, England. Telephone : Wymondham (01953) 608000 Telex 97401

SERVICE BULLETIN

Date 23.09.94

Model Elan S2

Number 1994/08

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

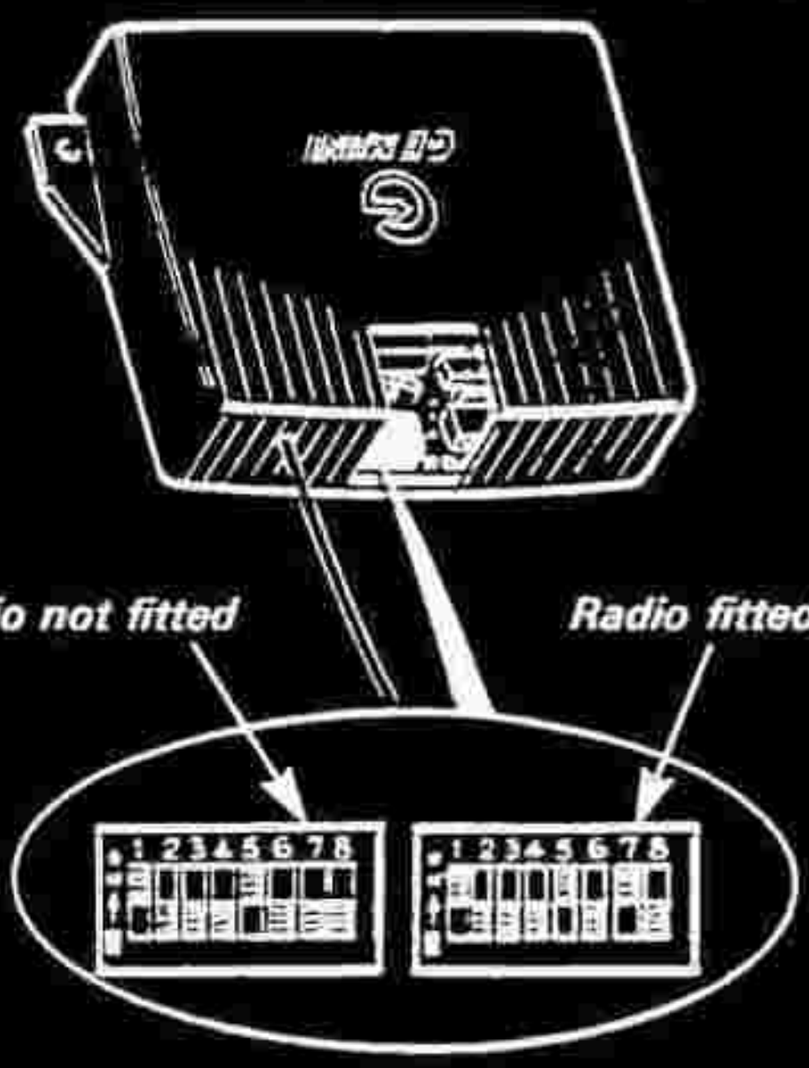
NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Revised instructions for alarm sensing of LHD dealer fit audio equipment.

REASON: New specification of LHD 'no radio' option wiring, to allow easiest interfacing of vehicle alarm system with dealer fitted audio equipment.

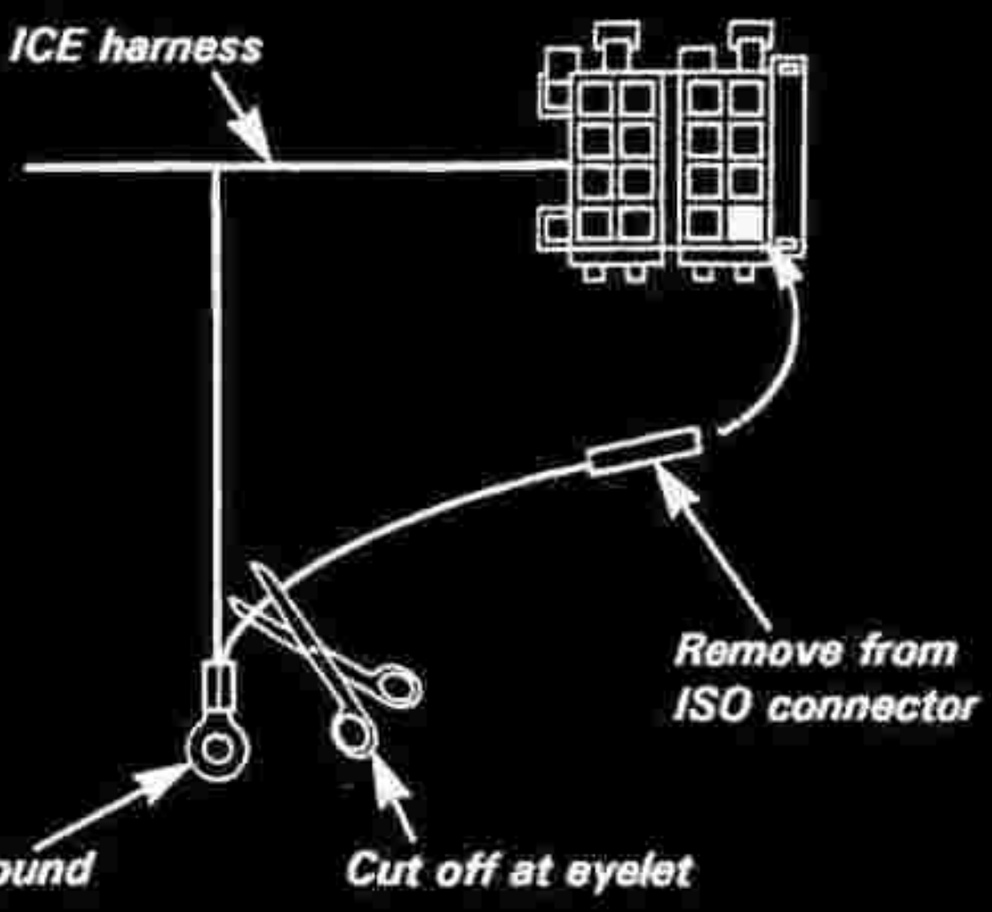
ACTION: Refer to Service Bulletin 1994/05 page 5.
If fitting audio equipment to a LHD car built with the 'no radio' option, from VIN R 6165 (Sept. '94), it is no longer necessary to re-programme the alarm controller as specified on S/B 1994/05.
For clarification, alarm connection details follow for all Elan S2 variants built without audio equipment:

RHD cars: The radio alarm link is already fitted and earthed to the scuttle beam at the right hand end of the row of mini-relays, accessible beneath the binnacle cover. Release the lead and attach to the case of the audio set. Note that the alarm controller radio option switch is already set to the 'on' position.



LHD cars (from VIN R 6165): On these cars, the radio harness eyelet is earthed (with no radio) via a bridging cable to an earth terminal in the radio harness ISO connector plug. When fitting a radio, unplug the bridging cable and cut off from the eyelet. Attach the eyelet to the radio case. Note that the alarm controller radio option switch is already set to the 'on' position.

LHD cars (prior VIN R 6165): Obtain radio alarm link A082M4989F and plug into the brown/black lead from the I.C.E. harness. Attach the lead to the case of the audio set. The alarm controller must then be re-programmed: Drop the glovebox down for access to the controller, and unclip the small cover on the top of the controller case. Move switch no.7 (radio option) to the down ('on') position, and refit the cover.



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SERVICE BULLETIN

Date 07.11.94

Model Elan

Number 1994/09

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

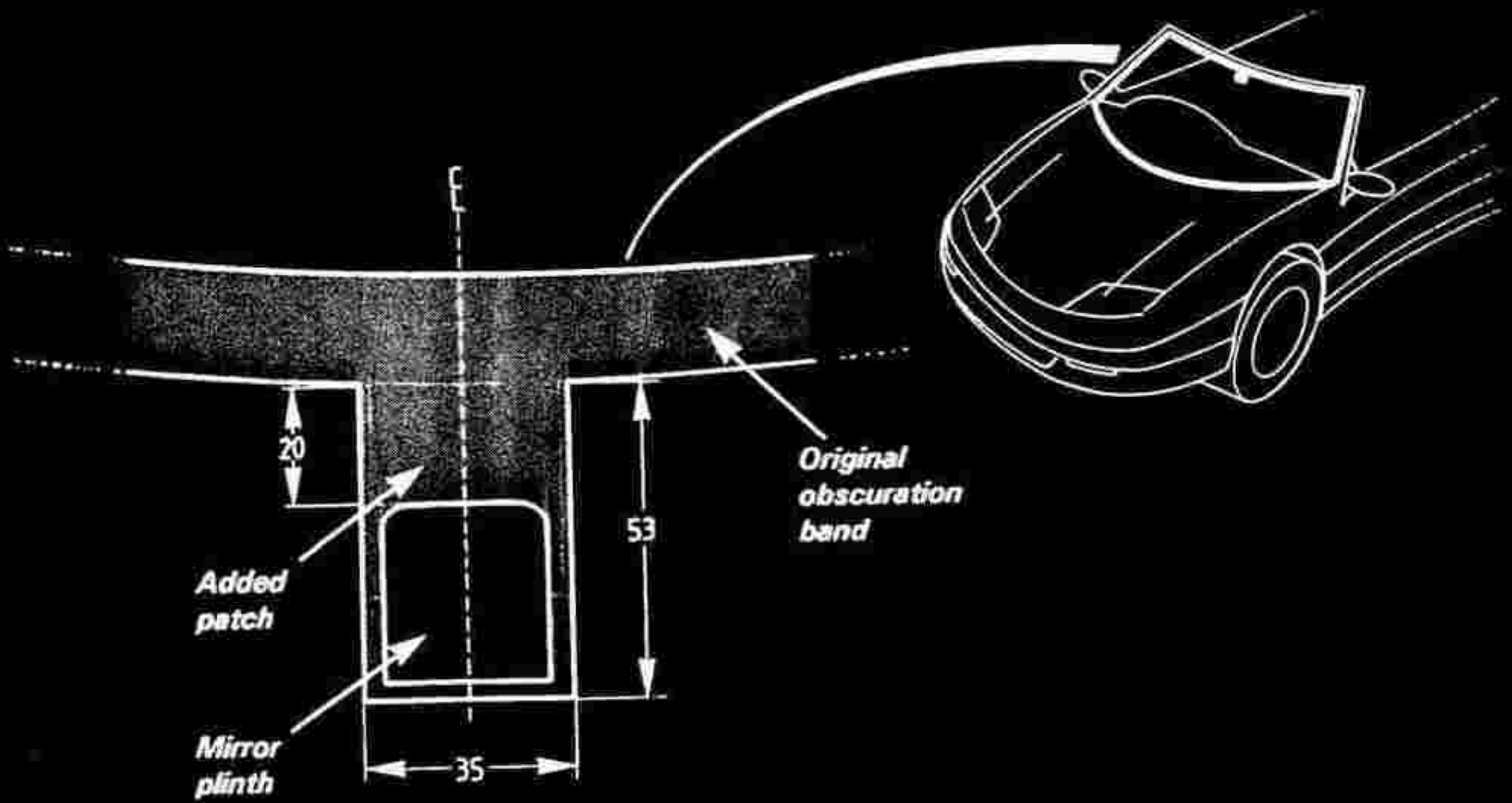
NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Revised windscreen obscuration band.

REASON: The obscuration band applied to the inside periphery of the windscreen by the screen manufacturer has been revised in order to increase resistance to stress related effects. As a consequence of this action, the patch obscuring the interior mirror plinth has been deleted. When fitting a replacement windscreen, this patch must be manually added using Betaseal primer.

ACTION: When fitting a windscreen to an Elan S1 or S2, refer to section BK.15 of the Elan Service Notes manual, but delay the glueing of the interior mirror plinth until after the Betaseal primer has been applied, with the following addition:

Use masking tape to mark out a rectangular patch extending down from the centre top of the screen obscuration band as shown in the diagram below. When the primer has fully dried, continue with the mirror plinth bonding as previously specified.



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SERVICE BULLETIN

Date 10.02.95

Model Elan

Number 1995/03

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Mis-diagnosis of leaking brake proportioning valves.

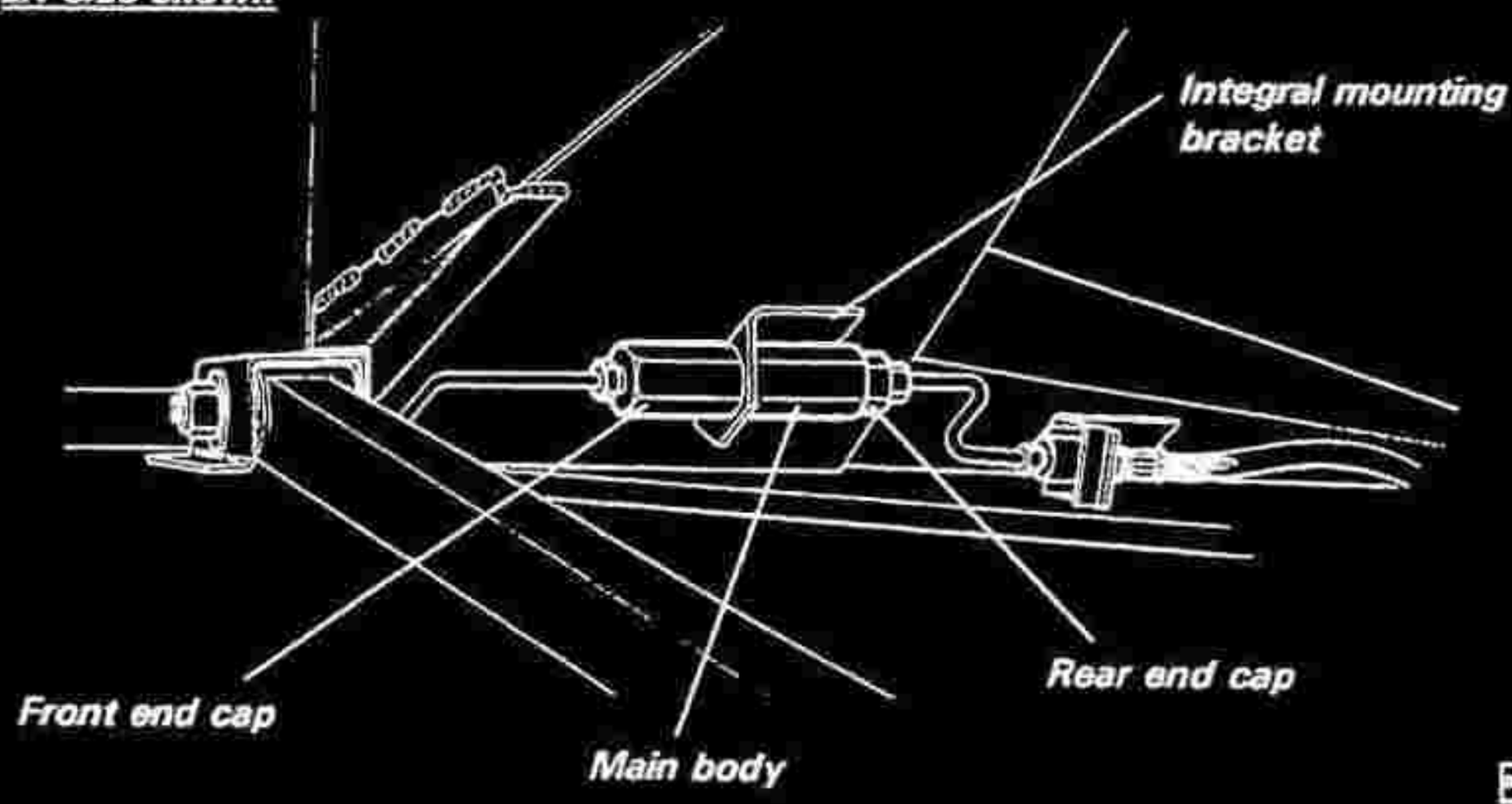
REASON: To reduce needless replacement of valves.
The brake pressure proportioning valves fitted to the rear brake circuits of Elan models, are sometimes erroneously diagnosed as leaking, due to their 'wet' appearance. This wetness is normal on a newly installed valve, and is due to the discharge of surplus polyalkyene glycol assembly fluid used during manufacture of the valve.

ACTION: If concern is expressed over the appearance of fluid around a brake pressure proportioning valve of an Elan, especially from the joint between the main body of the valve and the rear end cap:

- Thoroughly degrease and clean the area before monitoring the appearance of any further wetness.
- Assess the colour of any 'leaked' fluid; assembly fluid is clear, brake fluid is amber.
- Check the level of fluid in the brake fluid reservoir; the level should fall progressively towards the 'min' mark as the pads wear in service.

Notes
The valve must not be separated from its mounting bracket. New valves are supplied only in pairs complete with their mounting brackets (kit part no. A100J6049S).
Right hand and left hand valve assemblies are identical, with the chassis fixing point differing to accommodate the asymmetric mounting bracket.
If submitting a warranty claim, the exact source and nature of the leak must be specified. Claims will not be paid if returned units are found to be fault free.

LH side shown



sb-prop

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SERVICE BULLETIN

Date 10.02.95

Model Elan

Number 1995/04

CLASS 3

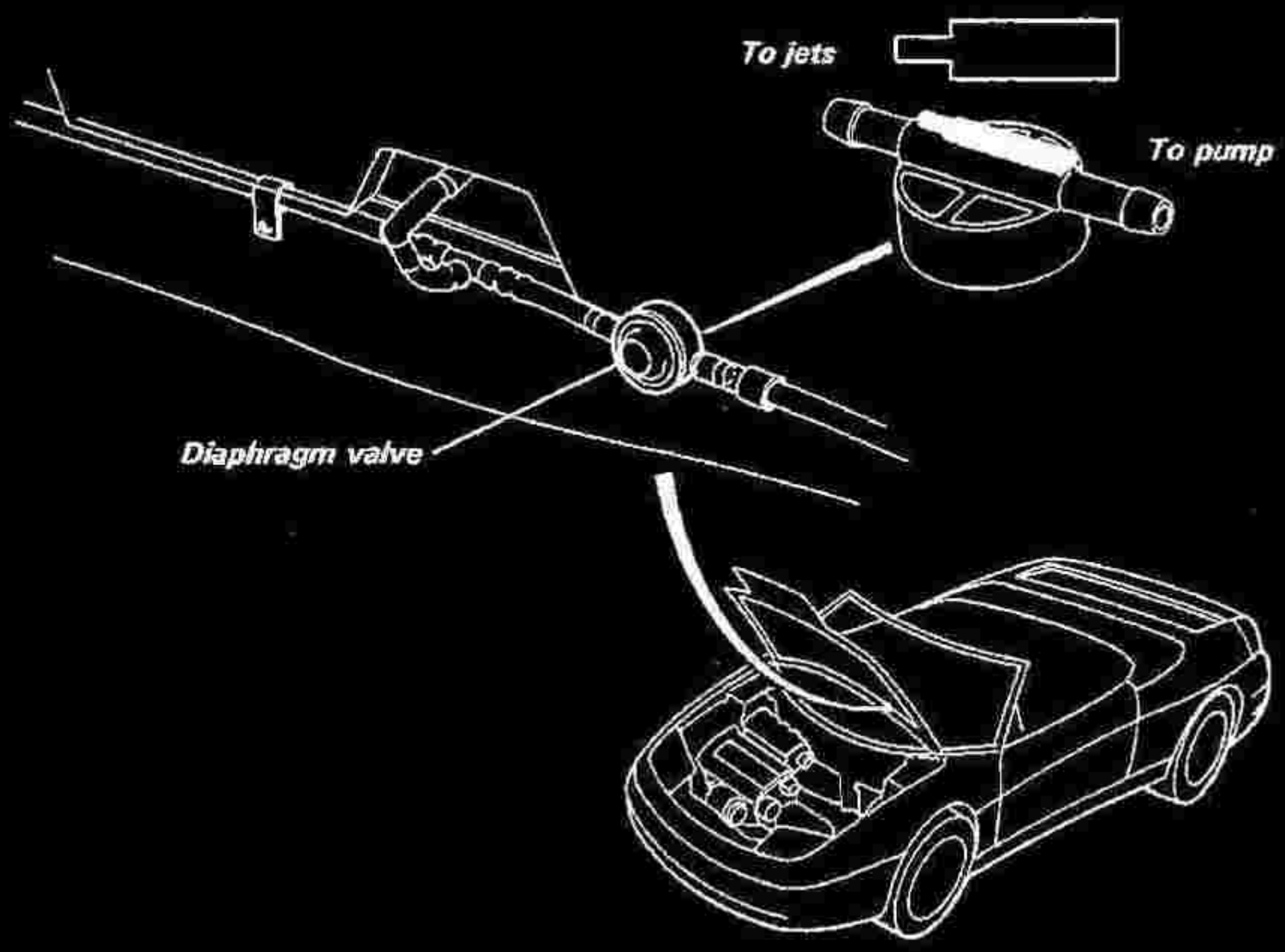
Service Manager	Service Reception	Supervisor	Parts Manager

NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Relocation of windscreen washer diaphragm valve.

REASON: To prevent 'dribbling' from washer jets.
A spring loaded diaphragm valve is fitted in the windscreen washer tubing in order to close off the pipeline unless pressurised by the pump. This device is designed to prevent self-siphoning and dribbling from the washer jets. On early cars, the valve is located next to the washer bottle in the boot, but the inertia of the water column between the valve and jets can, under hard braking or cornering, result in sprinkling from the jets.

ACTION: If a customer expresses concern about the trait described above, the diaphragm valve should be relocated to a position under the bonnet, immediately before the 'T'-piece junction for the LH washer jet. This site is used on current Elan S2 production.
The preferred plumbing is with the symbol on the underside of the valve oriented as shown below:



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SERVICE BULLETIN

Date: 10.04.95

Model: Elan

Number: 1995/08

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

TITLE: Body damage caused by manhandling.

REASON: To highlight dangers of incorrect practice.

ACTION: It is most important that all dealer staff are aware of the danger of causing body damage or gel cracks by applying excessive force or pressure to composite body panels. If the vehicle needs to be manhandled, force should be applied primarily via the front or rear bumpers rather than to body panels or the rear aerofoil.
A particular danger arises when preparing to raise the car on a 4-arm wheel free garage lift. If the arms of the lift do not fit beneath the car to reach the jacking points, do NOT manually lift the car by the front wheelarches in order to position the arms, or the topshell will be overstressed. The resulting gel cracks may not become apparent for some time, but will require major cosmetic repair at some point. If necessary, park the car on four suitably positioned blocks in order to provide sufficient clearance for the lift arms.
Be aware that warranty claims for body or paint damage caused by mis-handling of this nature will not be honoured.

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Lotus Cars Limited, Norwich, Norfolk, NR14 8EZ, England. Telephone 01953 608000. Telefax 01953 608257

SERVICE BULLETIN

Date: 01.05.96

Model: Elan

Number: 1996/01

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Replacement tyres for M100 Elan

REASON: Discontinuation of original equipment tyres

ACTION: Further to Service Bulletin 1995/26, the content of which is also included here, Lotus approved replacement tyres for the M100 Elan are as follows:

1. *European Elan S.E. ('S1' Turbo)*

Original equipment: Michelin MXX-2 205/50 ZR15
Pressure: 1.8 bar front & rear

The approved replacement is: **Michelin MXX-3 Pilot SX 205/50 ZR15**
Pressure: **2.0 bar front & rear**
This tyre may be used either in vehicle, or axle sets (front or rear) in combination with MXX-2, but tyres must not be mixed on the same axle. In all cases, the above specified pressures apply to the individual tyres, regardless of the fitment configuration.

2. *USA Elan S.E. ('S1' Turbo)*

Original equipment: Goodyear Eagle GS-D 205/45 ZR16
Pressure: 1.8 bar front & rear

The approved replacement is: **Pirelli P Zero 205/45 ZR16**
Pressure: Up to 100 mph (160 km/h); **2.0 bar front & rear**
Sustained speeds over 100 mph (160 km/h); **2.3 bar front & rear**
This tyre may be used either:
i) in complete vehicle sets;
ii) in axle sets in combination with the original specification, with -
Pirellis fitted to the **REAR** axle, and **Goodyears** fitted to the **FRONT.**
(Note that this configuration is opposite to that specified below for the Elan S2)
The two tyre types must not be mixed on the same axle. In all cases, the above specified pressures apply to the individual tyres, regardless of the fitment configuration.

3. *Elan S2*

Original equipment: Michelin XGTV Pilot SX 205/45 R16 83V
Pressure: 2.0 bar front & rear

The approved replacement is: **Pirelli P Zero 205/45 ZR16**
Pressure: Up to 100 mph (160 km/h); **2.0 bar front & rear**
Sustained speeds over 100 mph (160 km/h); **2.3 bar front & rear**
This tyre may be used either:
i) in complete vehicle sets;
ii) in axle sets in combination with the original specification, with -
Pirellis fitted to the **FRONT** axle, and **Michelin** fitted to the **REAR.**
(Note that this configuration is opposite to that specified above for the USA Elan S.E.)
The two tyre types must not be mixed on the same axle. In all cases, the above specified pressures apply to the individual tyres, regardless of the fitment configuration.

Lotus Cars Limited, Norwich, Norfolk, NR14 8EZ. England. Telephone 01953 608000. Telefax 01953 608257

SERVICE BULLETIN

Date: 30.09.96

Model: All

Number: 1996/14

CLASS 3

Service Manager	Service Reception	Supervisor	Parts Manager

NOT TO BE REDISTRIBUTED FOR PROFIT

TITLE: Approval of Mobil 1 0W-40 engine oil.

REASON: Launch of respecified Mobil 1

ACTION: Mobil 1 5W/50 is the specific oil recommendation for the Lotus type 918 engine as used in the Esprit V8, and is also one of the recommended oils for all Lotus 900 series 4-cylinder engines, and M100 Elan.

Mobil have reformulated this product in order to capitalise on the fuel economy, reduced emissions and improved cold starting and engine efficiency offered by the new viscosity rating of 0W-40. Lotus have tested and approved the new specification of Mobil 1 for all previously recommended applications.

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